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ACUTE INTESTINAL OBSTRUCTION FOLLOWING OPERATION FOR ACUTE APPENDICITIS.

By JOHN B. DEAVER, M.D., Philadelphia, Pa.

Acute intestinal obstruction following operative interference in acute appendicitis is one of the most serious of the sequelæ of that disease. The gravity of the condition depends upon the fact that a second operation is always urgently demanded. In the presence of an infected area of the peritoneal cavity and with the already weakened resistive power of the patient to shock, it would naturally follow that the mortality of acute obstruction is high.

When the appendix becomes inflamed, the peritoneum covering it suffers from the extension of the inflammation. The peritoneum of the cecum, adjacent small bowel, and right iliac fossa also becomes involved. The peritoneum is in a state of inflammatory hyperemia; congested, red, and having lost most, if not all, of its lustre. An exudate, serous in character, is produced which may disseminate through the peritoneal cavity. These changes are not noted in the early stage of acute appendicitis, and if operation is performed and the source of infection removed, the peritonitis will subside and give no further trouble. Sometimes, however, the serous inflammation may be more virulent and give rise to a fibrinous exudate. Organization then takes place with newly formed connective tissue cells and capillaries, and this granulation tissue, regenerating, is transformed into fibrous connective tissue, which cicatrizes and results in adhesions and bands. If the bowel is caught in any of these contracting adhesions an obstruction results.

Lilienthal reports a case of acute non-perforative appendicitis with free serous fluid in the peritoneal cavity. The appendix was removed and recovery uneventful. Five weeks after operation the pa-

tient was attacked by severe abdominal pain and vomiting. Calomel was administered and aggravated the symptoms. Twenty hours after the onset of the attack, the abdomen was opened and a coil of ileum found to be constricted by a band of adhesions; evidently a progression of the serous peritonitis into a fibrinous exudate with organization had occurred.

The most common peritoneal complication of acute appendicitis is a circumscribed abscess. This may result from a perforating appendix or from the conversion of a fibrinous exudate into a purulent collection. The wall of this abscess cavity is formed by an exudate, purulent in character, which more or less securely unites the appendix, cecum, great omentum, mesentery, the neighboring coils of small bowel, and the parietal peritoneum.

Operation will empty the abscess and remove the diseased appendix, but the exudate, which until then has served the useful purpose of restricting the spread of infection, now becomes a menace by its liability to organize into connective tissue. Such adhesions may give rise to disastrous intestinal complications. By their mere adhesion to portions of the bowel they inhibit peristalsis, and by their contraction cause intestinal obstruction. Injury to the free edges of the omentum or mesentery may result in their adhesion to the small bowel with a consequent obstruction.

Hotchkiss reports a case due to the former cause, and I have reoperated upon a case of appendicitis and found the ileum constricted near the cecum by the free border of the meso-appendix.

The greatest number of acute obstructions of the intestine follow those cases in which an abscess existed at the time of first operation and in which drainage was used. During 1901 I operated upon ten cases of obstruction in which abscess had existed. This furnishes a most potent argument in favor of the early operation with removal of the appendix before the extension of the inflammation gives rise to a sero-fibrinous exudate; as I have remarked in a previous paper—"Walled off," is an expression often used by physicians as a term of congratulation, but it also denotes a most fertile condition for a future intestinal obstruction.

Gibson, in a study of one thousand operations for acute intestinal obstruction, found bands to be the constricting cause in 186 cases. These were due most frequently to the inflammatory remains of diseased appendices and of the female pelvic organs. Many of these bands were velamentous adhesions. Of the 186 cases, 76 died, a mortality of 41 per cent. The small bowel is affected in 95 per cent of the cases of obstruction. The adhesive bands closing down on the in-

testine obstruct the fecal circulation: but, as Kocher has pointed out, the changes which follow are not due to the pressure of the intestinal contents, but are the result of the venous stasis induced. Necrosis and ulceration of the mucous membrane follow, with absorption of septic products, and leakage of bacteria and their toxins into the general peritoneal cavity.

The symptoms of intestinal obstruction following operation for acute appendicitis are marked and unmistakable, and usually occur about ten days or two weeks after operation. The patient is suddenly seized with colicky pains referred at first to the umbilicus, but later becoming diffused. There is usually absolute constipation with inability to pass flatus, nausea, and vomiting becoming fecal. The temperature is stationary or subnormal, the pulse is small and rapid, and shock is an early symptom. The abdomen at first is rigid and then slowly distends. This tympany increases the vomiting and by pressure embarrasses the heart and lungs. Later peritonitis ensues with further shock and death rapidly follows.

There is no treatment available other than immediate operation as soon as the diagnosis is established. As Sir Frederic Treves puts it, "Operation is the first and only resource." Atropine has lately been advocated as a certain antispasmodic in mechanical obstruction. The mortality is high enough as it is without increasing it by giving any drug in cases of ileus due to a band of adhesions. The greatest difficulty is encountered in making the abdominal surface aseptic for the second incision and this increases the risk of operation very largely. The presence of a discharging or granulating wound is very liable to infect the remaining peritoneum. The Murphy adhesive dam may be used with advantage after the usual preparation of the abdomen has been performed. This will cover the wound from the first operation and give some security against infection.

On opening the abdomen the bowels are drawn out slowly and covered with hot towels. The constriction usually takes place in the ileum near the cecum. All adhesions and exudate should be carefully separated from the bowel and the peritoneum sutured, if torn. The injured surfaces may be covered with cargile before replacing them in the abdomen. It is important not only to remove the primary point of constriction, but to search for other adhesions as well. After freeing the intestines at all points they are replaced in the abdomen and the wound sutured.

The after treatment of these cases is very important, because paresis of the bowel from handling or from peritonitis often results. The first indication is to overcome shock; normal saline solution by the

bowel or even intravenous transfusion is a very valuable adjunct; whiskey, strychnia, and atropia may be given hypodermically. Secondly, peristalsis must be restored to rid the bowel of its toxic contents. Lavage of the stomach should be performed as soon as the patient is out of ether, introducing Epsom or Glauber's salts through the tube into the stomach. The colon should be emptied by an enema, eserine may be given hypodermically on general principles, and turpentine stupes applied to those parts of the abdomen not covered by a small dressing over the wound.

In a few hours the patient reacts and passes gas freely with fecal material. When operation has been deferred until late the patient will probably die from shock, or he may survive a few days when general peritonitis will hasten the end.

The deductions to be drawn from observing a number of these cases are two:

First—That delay in operating upon acute appendicitis may result in intestinal obstruction.

Secondly—That immediate operation offers the only hope for life in most cases.

In closing this paper I append the notes of a highly interesting case of obstruction occurring twice after the primary operation.

Jennie W., age 20 years, after several mild attacks of appendicitis was suddenly seized with acute epigastric pain, nausea and vomiting. In a few hours the pain became diffused and tenderness increased on the right side. The bowels were constipated. Sixty hours after the onset of the initial symptoms she was admitted to the German Hospital in a serious condition. Temperature 99.6, pulse 112. The abdomen was slightly distended, with marked bilateral rigidity, and exquisite tenderness over the right iliac fossa. There was nausea and vomiting on admission, and a vaginal examination showed the presence of pus in the pelvis.

Operation under ether anesthesia, one hour after admission, revealed an appendix in the subcecal fossa, swollen, edematous, and curled on itself so that the tip was adherent to the cecum; at the point of adherence necrosis, both of the cecum and appendix, was found. The latter was ligated and excised and the stump invaginated into the cecum by Lambert silk sutures. The necrotic spot in the cecum was also sutured.

There was a general peritonitis, with an odorless seropus throughout the abdominal cavity. In the pelvis the pus was thicker and the coils of bowel were covered with exudate. The peritoneal cavity was flushed out several times with hot saline solution, all exudate wiped away, the bowels and omentum replaced and the wound partly closed with wormgut, leaving a glass drainage tube to the pelvis and a gauze wick to the right iliac fossa.

The patient reacted well and slowly convalesced. There was a daily movement of the bowels from the second day after operation, and by the tenth day all drainage was removed. On the morning of the twelfth day after operation she was seized with colicky pain over the entire abdomen and with slight nausea; an enema resulted in a large fecal movement, but the pain continued. Twelve hours later she began to vomit and operation was advised, but owing to delay in obtaining the consent of relatives was not performed until 24 hours after the onset of the abdominal pain.

The abdomen was covered with a sheet of Murphy adhesive dam, and under ether an incision six inches in length was made to the inner side of the old wound. The coils of ileum occupying the right iliac fossa were bound together in a firm mass with several points of constriction, the most marked of which was at the ileo-cecal junction. There was also adhesion of the bowel to the fossa. The appendix stump was clean. All adhesions were broken up, some cut and others torn, and all bleeding points ligated. After liberation of the bowel it was seen that about two and a half feet of ileum had been involved in the mass and that the freeing of the adhesions had caused denudations of the peritoneum in several places. These were either sutured or covered with cargile and the bowel returned to the abdominal cavity. During the manipulation of the bowel the coils that were brought out of the wound were all protected with hot towels. Owing to oozing, which could not be controlled, a glass drainage tube was passed into the pelvis and the wound was then closed with through and through wormgut sutures.

The patient reacted well from operation, and after troublesome nausea had been controlled she was once more on the road to recovery. Again the bowels were kept freely moving by the aid of salts, but about midnight of the seventh day she was again attacked with colicky abdominal pain, most marked on the left side. Endeavors to pass a high rectal tube were fruitless and an oil enema was unavailing. It was evident that the sigmoid was constricted. Toward morning vomiting began, the pain increased, and the third operation was immediately performed, eight days after the second, and twenty-one days after the first operation.

The old wounds and the abdomen were covered with adhesive dam and an incision was made in the left rectus six inches long. The general cavity was packed off with gauze, and about 500 c. c. of thin, yellowish, nonodorous pus found in the pelvis. The latter was freely irrigated with saline solution. The coils of ileum were found to be adherent and covered in many places by a plastic exudate, and in several areas there were points of constriction from velamentous bands. The sigmoid at its beginning was totally occluded by a constriction. All adhesions were either torn or cut loose and bleeding checked by either ligature or suture. The coils were firmly adherent to the right side of the abdomen at the site of the old wounds and the ileum near its cecal junction was constricted by a band. These adhesions were broken up, all raw surfaces sutured or covered with cargile, all exudate wiped away, and the bowels returned to the abdominal cavity. Two

glass drains were introduced into the pelvis and the wound closed with wormgut. The wound on the right side was cleaned up and the bowels held down by iodoform gauze; no sutures.

The patient was well shocked toward the close of the operation and 2,000 c. c. of saline solution were given intravenously. For several days she was critically ill and required every resource we had to keep her alive, but she slowly improved and by the fifth day was out of danger. Recovery was very slow, the wounds granulated nicely, and she was discharged on July 26th, sixty-three days after admission. On October 1st she visited the hospital, was in perfect health and had not developed a hernia.

THE CLINICAL SIGNIFICANCE OF ASCITES.

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By the differential diagnosis of ascites, we mean less the diagnosis of this morbid condition from those simulating it than the differential diagnosis of ascites in itself, its significance, interpretation, and possible clinical confusions.

(*a*) Logically the first step is the determination of the existence, in a given case, of ascites. Before an examination into the possible causes of ascites, we assure ourselves that no condition exists which can be confounded with fluid in the peritoneum.

Although ascites is usually one of the most easily demonstrable physical conditions, yet many excellent clinicians have mistaken it for other affections. Fecal accumulations cause dullness in either flank, simulating fluid, but the history and immobility of the dullness preclude error, if differentiation by enemata and catharsis is employed. I have seen instances in which the retention of large quantities of semi-fluid feces in the ascending and the descending colon closely resembled free fluid, in that both mentioned segments of the colon were greatly dilated and the fluid shifted with change of position. On thrusting palpation, a swashing may be elicited over the colon—Kuessner publishes a case in which a large quantity of fluid in the intestines was mistaken for ascites. Leube confused ascites with an enormously dilated stomach. Præperitoneal lipoma, etc., hydronephrosis, hydatid cysts, pregnancy, dilated bladder, ovarian cysts, tympanites, are frequent sources of error.

We can neglect the more salient signs of hydroperitoneum and lay more especial stress upon exceptions. Five hundred to one thousand cubic centimetres of fluid are necessary for clinical detection. Fried. Mueller determined that one litre of fluid would give no symptoms, that 2,000 cb. cm. of fluid are necessary to produce a distinct change of dullness with change of position, which conclusions, however, were based upon experimental work in the cadaver.

With small effusions, one examines the patient in the genupectoral position—the best method according to Leube. Elevation of the buttocks causes scanty fluid to gravitate to the flanks for its easier demonstration. It is not necessary to dilate upon the familiar fact that free fluid gravitates to the lowest parts and that the gas distended gut is supernatant. Classically, therefore, the fluid in dependent parts gives dullness, while the intestines are located by tympany in the highest parts of the abdomen. According to physical laws, these areas must vary with change of position, always giving in uncomplicated cases, tympany above and dullness below. Since we are emphasizing exceptional clinical characters, this law lapses when the mesentery is retracted and does not allow the gut to float, in which event there is dullness over the highest areas on superficial percussion, though tympany can be elicited on deep percussion over the same area. Adhesions between the intestinal loops defeat shifting of the fluid. Two lines of tympany in the flanks designate the colones ascendens et descendens, replaceable by dullness from scybala. Gut adherent anteriorly determines permanent tympany in that location. I am acquainted with an instance of ascites in which, ignoring this possibility as well as the physical signs, a physician perforated the intestine, happily without unfavorable issue. Physical signs should, then, be the sole guide as to location of abdominal and thoracic paracentesis.

Meadows described permanent tympany in the flanks in ascites due to extensive adhesions of intestinal coils to the lateral abdominal parietes.

Schuh (*Oester. Med. Jahrb.*, Bd. XVII., St. 3 u. 4, and Bd. XVIII., St. 2 u. 3) in 1839 was one of the first to emphasize the importance of light percussion in the determination of ascites, since heavy tapping elicits tympany from the adjacent or more deeply situated intestines.

Rostan (*Presse Méd.*, 1837, No. 24) noted that tympany might be absent in ascites when the intestines contained little or no gas, a point sometimes forgotten in differentiation between ascites and ovarian cyst, which latter may thrust itself in between the coils of gut and simulate ascites.

Another confusion in the opposite direction lies in the possibility of a large quantity of free fluid existing in the abdomen without giving dullness, as recorded by J. W. Anders (*Internat. Clinics,* Second Series, vol. III, p. 88). W. Ramsay Smith of Australia reports two cases of carcinomatous peritonitis in which great quantities of fluid accumulated in the peritoneum, without producing either dullness or indeed any variations of the tympany with change of position. In a case of liver cirrhosis shown in my clinic this last year, there was much tympany, but no dullness in any posture. Stimulated by the post-mortem results in the cases of Anders and Smith, I tapped the patient and withdrew several quarts of ascitic fluid, the first recorded time as nearly as I can determine that paracentesis has been performed without first finding dullness.

Edema of the subcutaneous tissue renders percussion of the abdomen difficult, as do fatty abdominal walls, fatty omentum, and mesentery. Fluctuation (ballottement), due to the transmission of a fluid wave from side to side, is usually present, but may be absent because of tense abdominal walls or great fluid accumulations. Pseudo-fluctuation may be caused by accumulation of fluid other than ascitic, as intestinal contents, or by lax abdominal walls—in which latter condition, however, a third hand placed in the median line of the abdomen will break the deceptive wave which here is due to superficial vibration. Fluctuation may be felt in ascites even where tympany exists, whereas in ovarian cysts, e. g., fluctuation is obtained strictly over the dull area. In women, the water-pillow fluctuation as described by Landau, may be elicited by vaginal examination. The attitude is that observed in pregnancy, and the abdomen resembles that of a batrachian (ventre de batracien). The pale, tense, striated, edematous, possibly inflamed skin, indefinite gastro-intestinal symptoms, a pouting navel, the diastasis of the recti muscles, thoracic symptoms, etc., etc., are highly equivocal and per se are merely symptoms. Gas is usually more centrally located, but in ascites neither the distension nor the configuration of the abdomen is distinctive.

(*b*) Granting that ascites actually exists in a given instance, the diagnosis is still incomplete, since ascites is but a symptom, if we except the so-called primary or essential ascites of French writers. The first inquiry, logically, relates to the etiology, but the etiological differentiation can be obtained only by a process of careful elimination. The rational method endeavors to distinguish between hydroperitoneum (or ascites) and peritonitis effusiva, a separation between which is not, however, always possible since they occasionally occur conjointly.

The best differential scheme to follow is, in my judgment, the following:

i. Is the ascitic accumulation due to a mechanical agency (increased pressure)? Is it then a *hyposlatic transudate?*

ii. Is it due to increased permeability of the blood vessel walls? Is it a *cachectic hydrops?*

iii. Is it due to exudation, *inflammation?*

iv. Is the cause *some local peritoneal lesion* other than inflammation?

i.

Considering the mechanical question, it is necessary to investigate the condition of each intra-thoracic organ. Diseases of the pericardium, myocardium, endocardium, and aorta should be definitely determined or positively excluded. Disease in the lungs, pleuræ, spinal column, diaphragm, and mediastinum may cause hydrops peritonei. Excluding disease in the structures enumerated, mechanical stasis in the cava inferior above the liver, in the hepatic vein, in the liver itself, or in the portal-vein system, should be considered.

1. Considering the heart, we need not enumerate the various diseases of the organ causing ascites and anasarca, but confine our attention to the hydrops produced by heart disease in the broad sense of the word. In heart disease the hydrops extends upwards from the feet, the ankles and legs having been swollen prior to involvement of the peritoneum. In estimating the responsibility of the heart for a given ascites, the physical signs of cardiac disease are invaluable, such as dilatation or hypertrophy of the different heart chambers, accentuation of certain tones, the character of the pulse and its tracings, cardiac murmurs, cyanosis, etc.

Lack of circumspection may lead to diagnosis of essential cardiac alteration when the ascitic fluid merely pushes the heart closer to the chest-wall, thus giving a more diffuse apex beat and a larger area of dullness to the left, simulating, as in pregnancy, hypertrophy or dilatation.

In cardiac disease dyspnea usually antedates anasarca and ascites. Secondary dyspnea, due to pressure of an ascites upon the lungs and diaphragm, is secondary chronologically as well as etiologically. Hypostatic hydrops of the serous cavities may exceptionally occur without anasarca, especially in concretio cordis cum pericardio. Some stress has been placed upon the occurrence of ascites without anasarca in Pick's pericarditic pseudocirrhosis of the liver, a term quite unwarranted as it is, we believe, indicative of no separate morbid entity. As Strümpell pointed out in 1883, it is well known that pericarditic

or valvular lesions may produce ascites without entailing an anasarca.

2. In our etiological search, physical examination of the lungs may be rewarded by finding adequate causal factors, yet here again we must guard against confusion of primary with secondary manifestations. The lungs are often compressed by a large ascites, with evidences thereof in dullness, râles, or even tympanitic resonance, cyanosis, and dyspnea. To reiterate, such symptoms are purely secondary and are not evidences of pulmonary disease. The tympanitic pulmonary note of compression may obscure findings otherwise strongly suggestive. In one instance (case of Drew), for illustration, the tympanitic note produced by compression of the lungs by a massive ascites concealed large caseous areas in both the upper lobe apices which would have otherwise materially strengthened a diagnosis of tubercular peritonitis. In a recent autopsy upon a case of cirrhosis hepatis cum ascite, the abdominal fluid so compressed the lungs that caseous foci in the upper lobes were overlooked clinically.

3. The liver sustains a peculiar etiological intimacy with ascites, since not only does ascites mask the physical signs of the casual element in the liver, but the retrograde venous stasis is most inevitably expressed in this individual form of passive congestion. In every instance of ascites we strongly suspect the liver when heart and kidneys are negative. The hepatic diseases in which ascites does not usually occur are fatty liver, hypertrophic cirrhosis, abscess, the icterus liver, and echinococcus simplex. It generally occurs in cancer, syphilis, amyloidosis, pylephlebitis, adhesiva specifica, echinococcus multiplex, hyperemia mechanica, and cirrhosis atrophica. Portal ascites may produce later on edema of the lower extremities usually explained by pressure on the inferior vena cava. Giovanni, however, considers that it is due to cardiac insufficiency which of necessity follows great ascitic accumulations.

The diagnosis of hepatic cirrhosis, apparently most easy, in reality is most intricate and without doubt the diagnosis of cirrhosis of the liver is very frequently incorrect. The characters of a portal-vein ascites are, that it commences in the peritoneum almost invariably, and that the legs swell secondarily from pressure on the vena cava inferior. This point is a classical criterion, but it is not infallible, since the legs may swell disproportionately, cicatrices or growths may involve the portal vein and cava simultaneously at the notch in the posterior surface of liver, and finally the legs may swell first and ascites may remain permanently absent, as in a case observed in the Cook County Hospital two years since.

Case (Edwards), *Journal of the American Medical Association,* June 13, 1896. Diagnosis: Arterio-sclerosis with secondary cardiac hypertrophy having been diagnosed, there was still an underlying disease. The findings were few, and the chief interest centered in the greatly dilated veins in the abdomen and legs, which obviously indicated obstruction. Was the obstruction intra-thoracic? The venous ectasia was rather too low to favor this construction. Was then the return venous flow impeded in the vena cava or in the portal-vein district? No cause could be invoked for the theory that the cava was compressed; there was no tumor, no inflammatory focus, etc.; hence attention was directed to the liver. There was no real jaundice, no ascites, and no splenic tumor; yet, knowing that a free collateral circulation may prevent or succeed in time a hepatic cirrhosis, and that the passive congestion of cirrhosis may in exceptional instances antedate the ascites, the ante-mortem diagnosis of hepatic cirrhosis was made.

The necropsy findings were in brief: Kidneys; surface slightly roughened; capsule freely separable; showing no marked naked-eye changes; microscopically, some slight arterial alterations and inconsiderable islets of connective-tissue change were observed. The heart weighed 420 grammes; the left ventricle was 20 millimeters thick and the aorta was somewhat atheromatous. Lungs: Some few adhesions in the right pleura; moderate marginal emphysema; mechanical hypostasis. Spleen: Very marked perisplenic changes, explaining the inconsiderable size of the organ compared with the liver. Liver changes: 28x18x18, 5x8x6 centimetres, 2,000 grammes: Surface smooth, no adhesions; porta free; the organ was universally red; the lobules were centrally fatty, and in their periphery exhibited delicate strands of connective tissue. Microscopic examination revealed a typical fatty alcoholic cirrhosis without any striking anomalies. The gastro-intestinal tract was negative. The peripheral veins conformed to the clinical signs. The vena cava was not compressed, not involved in any cicatrix, not the seat of any thrombosis, etc. The subperitoneal veins, especially in the right inguinal region, were varicose even to bursting. The clinical diagnosis of a latent hepatic cirrhosis with collateral circulation sufficient to obviate ascites and splenic tumor, was confirmed.

Labadie-Lagrave states that pre-ascitic edema of the lower extremities may appear as an initial or as an almost isolated symptom of cirrhosis. It was first described by MacSweney in 1876, then by Giovanni, by A. Gilbert and H. Presle (*Thése de Paris,* 1892). While edema as a rule accompanies or follows the ascites, it may antedate the appearance of ascites by months, even a year and a half. When it accompanies the first cirrhotic symptoms, it is a sign of diagnostic importance.

It may occur not from portal-vein stasis alone, but from cicatrices around the cava, cachexia, heart or renal complications.

Thierfelder believes the occasionally earlier appearance of anasarca

before ascites is often more apparent than real, since edema is better seen by patient and physician alike. Such edema may be due to meteorism or fluid pressing upon the cava or iliac veins.

Bamberger explained edema of the lower extremities in isolated cases by the fact that the pars hepatica of the cava inferior suffered contraction by shrinking of the cirrhotic liver.

However, I am convinced that none of the enumerated causes operated in this concrete instance. The great collateral circulation opened channels of communication between the vena porta and the venæ epigastricæ, by means of which the blood flowed from the latter to the venæ crurales and produced an edema of the lower extremities before a great degree of ascites was present. Monneret has described an instance in which, by the mechanism suggested, the overfilled epigastric veins produced edema of the abdominal walls.

In a case of ours recently operated for the sake of diagnosis, what seemed clinically to be a cirrhosis of the liver turned out an intense local congestion with great increase of connective tissue, resulting from pressure of a retroperitoneal sarcoma upon the hepatic vein, with all the signs of a liver cirrhosis. There were perihepatitis, an intense distension of the veins of the liver so that the organ resembled an injected specimen, ascites, etc., etc.

In cirrhosis ascites may be absent from the establishment of an adequate collateral circulation, or death from complications may intervene early before ascites appears. Heart and renal complications may be responsible for ascites in some forms of liver cirrhosis. An attempt should be made to exclude perihepatitis, which, according to Fagge, causes one death to every five fatal cases of cirrhosis, and is more apt to be attended by albuminuria. In amyloid liver, ascites results from hydremia rather than from portal-vein obstruction (Bamberger). In abscess it is rare, but may come from sero-fibrinous peritonitis, cachexia, or direct portal-vein compression. In the liver of passive congestion, ascites appears only after the ankles are swollen, but ascites is also prone to occur in cyanotic induration of the liver. In liver syphilis, ascites occurs not alone when the liver is small. It is almost unknown in simple atrophy of the liver. It occurs in 50 per cent of liver carcinomata from pressure on the portal vein, periphlebitis, growth of the primary neoplasm into the portal vein, from a weak heart, cachexia, or peritonitis—which in turn may be simple, purulent, or carcinomatous; illustrating one phase of the difficulty in the diagnosis of ascites. In pylethrombosis, ascites develops very rapidly, making tapping necessary, and it recurs rapidly. Urgent diarrhea and vomiting accompany it, there are copious hemorrhages from the

bowels and stomach, the spleen and abdominal veins are not so large, and the liver atrophies.

ii.

May the hydrops be due to increased permeability of the blood vessels? Such effusions are due to exhausting discharges, suppuration, cholera, marantic conditions, infectious diseases, scurvy, and lastly Bright's disease. Renal disease produces ascites which may be difficult to diagnose, since not every instance of albuminuria in ascites is nephritic. Albuminuria in cirrhosis is due to pressure on the renal veins, and disappears after parancentesis, a therapeutic means of diagnosis. Heart and renal disease may produce hydrops peritonei without anasarca, but we must remember that heart, renal, and hepatic disease may be coincident. In renal disease, the eyelids often become edematous first. Cachectic ascites is not uncommon in leukemia and kindred affections. Slight serous effusions occurring after acute infectious diseases in children may come under this title. Three instances of ascites after typhoid fever have recently occurred in Cook County Hospital. They have all been observed in convalescence, and the absence of any marked pain, rise in the pulse-rate, and temperature excluded peritonitis. In one case (Steve K.), as the typhoid temperature curve fell almost to normal, tympany was excessive and fluid developed, but without pain, although some tenderness was present. The temperature was then normal and the pulse 80. Several who saw the case believed it to be peritonitis (appendicitis?), although absence of rectal findings, leucocytosis temperature, rapid pulse, and the facies Hippocratica seemed to me final evidence to the contrary. Against tubercular peritonitis, operated the findings already mentioned, as well as a negative tuberculin test, splenic tumor, and roseolæ. The resorption of the fluid justified refusal to operate. The ascites seemed to me best explained by alterations in the vessel-walls resulting from the febrile state. Moser has lately reported a similar case. (For the characteristics of the fluid of a transudate, see Section iii.)

iii.

Ascites may result from peritoneal inflammation, and the fluid is then an exudate and not a transudate.

The specific gravity of the fluid has long been an important factor in differentiating between exudates and transudates in the peritoneal cavity and the percentage of albumin has been considered of almost equal importance.

Three divisions were formerly and are still distinguished:

(1) 1010 specific gravity, or lower, indicates a cachectic transudate, e. g., in nephritis with less than 1 per cent of albumin. A very low specific gravity and percentage of albumin occurs in amyloidosis.

(2) A hypostatic transudate has a specific gravity between 1010 and 1014 with an albumin percentage ranging between one and three per cent.

(3) An exudate possesses a specific gravity of more than 1018 and an albumin percentage of 4 to 6. The lower strata are heavier, and the specific gravity should be taken several times during the paracentesis. When there is less than 1 per cent of albumin, no disease of the peritoneum or portal vein exists. Reuss' formula enables us to compute the albumin percentage from the specific gravity. It is subject to an error of less than one-fourth of one per cent.

The percentage of albumin, 3-8 specific gravity, minus 1000, minus 2.8. A specific gravity of 1017 to 1020 positively indicates an exudate.

Neukirchen found the lowest specific gravity in Bright's disease and a successive rise in the following conditions: Liver cirrhosis, carcinoma of the liver, peritoneal cancer, idiopathic or tubercular peritonitis. He considered that a sinking of the specific gravity in later punctures was an ominous indication.

Runeberg and Reuss elaborated the tables and conclusions given above, yet they themselves admitted certain exceptions, combinations, and confusions. Thus an ascites, due e. g., to a carcinoma ad portam, as glands or growth in the liver substance, has a low specific gravity and albumin present to one or two per cent.

Should the carcinoma spread to the peritoneum (carcinomatous peritonitis), the specific gravity rises and five per cent of albumin or over, is found. An ascites due to the hydræmia of nephritis has a low gravity, but the figures rise when stasis due to weak heart sets in, or when intercurrent inflammation develops. In many cases of simple transudation (ascites, hydrothorax, etc.), we frequently note the subsequent development in the fluid of the characters of an exudate, due possibly to the irritation of the fluid upon the serous walls which enclose it.

Wolff holds that the rules of Reuss and Runeberg are unreliable, and Ott (*Prager Zeitschr. fuer Heilkund*, Band XVII, 1896) concludes (1) that the percentage of albumin does not indicate whether a given accumulation of fluid is a transudate or an exudate; (2) that we cannot calculate the albumin percentage from the specific gravity alone; and (3) that the specific gravity itself does not differentiate between an exudate and a transudate. F. A. Hoffmann, Citron, and Pick-

ardt have likewise the belief that there is no hard and fast line between exudates and transudates, nor positive differentiation between them by means of specific gravity or albumin percentage. Talma (*Zeitsch. f. Klin. Med.* XXVII, p. 1) holds that most cases of hydrops peritonei are inflammatory, but his views certainly seem extreme. The reaction of ascitic fluid cannot be considered indicative of its inflammatory or hypostatic nature.

Ascitic fluid always contains the constituents of the blood, albumin, globulin, urea, xanthin, hypoxanthin, guanin, uric acid, sugar, etc., etc. Ascitic fluid due to stasis is clear yellow, or yellow green, is alkaline and microscopically contains some lymph cells, erythrocytes, and peritoneal endothelium. Inflammatory exudates show a microscopic picture varying with the cause. Fibrin threads, pus, blood, adipose, chylous or chyliform fluid, intestinal contents, cancer cells, tubercle bacilli, diplococci or pyogenic organisms may be found. In exudates are found the polymorphonuclear leucocytes and some erythrocytes, while lymphocytes and red cells are detected in transudates and tubercular exudates.

Von Leyden has described an amœba in the ascitic fluid due to carcinoma which many, as Miura, consider wholly accidental. Rieder in carcinomatous peritonitis described cells, in which asymmetrical karyokinetic figures appeared. Quincke has laid particular differential emphasis upon the characters of carcinoma cells, especially when they are large, occur in groups, or are of varied sizes.

Rivalta (*Reforma Medica,* No. 96, 1895) calls attention to Primavera's method of differentiating between transudates and exudates by means of glacial acetic acid. A single drop will leave a white cloud as it falls to the bottom of a vessel containing an exudate, while addition to transudates gives no reaction.

Especially the French authors assert the existence of a primary or essential ascites, due to cold, excessive catharsis, drinking freely of water, climacterium, suppression of menses, or checking of hemorrhoidal bleeding. This so-called essential ascites is usually considered as a chronic serous peritonitis or a tubercular peritonitis, especially when it occurs in children.

Differentiation between serous and tubercular peritonitis. Henoch believes that a chronic serous peritonitis occurs in children, while West and Courtois-Suffit think such affections are tubercular. Henoch admits that the differentiation between chronic and tubercular peritonitis is often very difficult. In tubercular peritonitis there is usually a rise in temperature, and emaciation, but from the literature cases can be collected in which both are lacking. (The assumption that fever is

constant in tubercular peritonitis is a common error.) Bacilli and Koch's reaction may be absent in tubercular peritonitis, while innoculations and cultures are often negative. According to Tepret and Vierordt, chronic nontubercular peritonitis occurs especially in women, the causes of which, both local and general, concern our subject only in so far as ascites is involved. The general causes are Bright's disease, trauma, portal stasis, alcoholism, and heart affections. The ascitic form of nontubercular peritonitis may pass into the membranous or adhesive variety, the resorption being due to the formation of a collateral circulation in new adhesions, the ultimate stage of which may be peritonitis deformans or pachyperitonitis. Blood in the fluid argues for tuberculosis, carcinoma, or diathetic diseases, as scurvy or leukemia.

Serous peritonitis is usually chronic and often idiopathic; it is rare, and is accompanied by some fever, increased pulse rate, and tenderness; whereas, mechanical or cachectic ascites generally has a determinable cause, is relatively frequent, and lacks inflammatory insignia, although the two affections may co-exist, e. g., inflammation following paracentesis. The diagnosis of simple nontubercular peritonitis is indeed most difficult to establish without an autopsy and from the statistical standpoint, the diagnosis, in doubtful cases, of a tubercular peritonitis is by far more frequently justified when the question lies between simple and tubercular peritonitis.

Differentiation between (tubercular) peritonitis and ascites. Mechanical (portal) ascites is accompanied by other circulatory disturbances, e. g., splenic tumor, piles, caput medusæ, etc. The spleen may occasionally be enlarged in tubercular peritonitis, or even in simple serous peritonitis. The specific gravity and albumin percentage are almost final in determining between peritonitis and ascites. The fluid is generally clear in ascites, but may be so in peritonitis, in which, however, it is usually cloudy. Pain and fever usually designate encapsulation, but they are quite inconstant, hence tubercular capsulations may be confused with ovarian cysts, etc. Alcohol is a cause for chronic serous peritonitis as well as for ascites of cirrhotic origin. The liver is small in the terminal stadium of atrophic cirrhosis, but may be also atrophic in chronic serous peritonitis, according to Frerichs. The vascular dilatation is above the navel in cirrhosis, but below it in serous peritonitis, as Lancereaux first remarked. In tubercular peritonitis the venous enlargement is disposed as in cirrhosis hepatis. Cirrhosis of the liver is signalized by various urinary changes evidencing incomplete discharge of hepatic functions. There is a sedimentum lateritium, bile pigment, hepatogenous peptonuria, or hepatic glycosuria.

Talma differentiated between cirrhotic ascites and (serous) peritonitis by the presence in cirrhosis of a splenic tumor. In tubercular peritonitis there is often a hydrops ascites saccatus giving an irregular form to the abdomen from meteorism produced by adhesions, and irregular nodules sometimes simulating carcinoma. Encapsulated ascites, described by Hippocrates, may either occur alone in tubercular peritonitis or occur coincidently with free ascites. It must be remembered that ascites even in tubercular individuals is not by any means always tubercular, but may occur from other complicating conditions.

As illustrative we may briefly quote a case of encapsulated serous exudation about the gall bladder occurring in a tuberculous patient and due to angiocholitis and cholecystitis. Free tubercular ascites differs, according to Thomayer, from ascites simplex in this, that the tympany in tubercular ascites is often right sided, due to retraction of the mesentery (mesenteritis retrahens) over to the right side, and with it the small intestines. Mesenteritis retrahens is usually either tubercular or carcinomatous, but may sometimes be due to simple deforming peritonitis. We recall several instances in which right-sided tubercular masses pushed to the left both the tympany and the fluid, despite the existence anatomically of a retracting mesenteritis. In children, fluid may accumulate between the layers of the omentum. Hemorrhagic ascitic fluid occurs frequently in tubercular peritonitis, and rarely, if ever, in cirrhotic transudate, unless the latter is complicated with tubercular peritonitis, engrafted as a frequent complication upon the already altered peritoneum, as a locus minoris resistentiæ.

The "apparent tumors" (Bamberger) of tubercular peritonitis are always suggestive, where the nature of an ascites is in question. In two instances observed personally, the omentum was so retracted and so peculiarly adherent to the normal liver as to most closely resemble the edge of an enlarged cirrhotic liver. Intestinal or pulmonary tuberculosis, adhesive pleuritis, and meteorism from intestinal adhesions, or an irregular form of the abdomen with a doughy feel on palpation, speak for tubercular peritonitis. It is not always possible, however, to determine tubercular foci, but a good working rule is that a peritoneal exudate is tubercular when cancer, sarcoma, and trauma can be excluded. While deprecating unnecessary laparotomy, it seems to me that exploratory incision is often the only direct route to diagnosis and appropriate therapy. Internalists may perhaps be too backward in advocating operative procedures. In a case in Dr. De Lee's service recently observed, an acute ascites developed with high temperature and diffuse abdominal pain after a septic abortion. The diagnosis of tuberculous peritonitis, probably incited or awakened by the septic

complication, was confirmed by Dr. Watkins, who found the peritoneum diffusely studded with miliary tubercles. Immediate recovery followed the abdominal section.

In differentiating between tubercular and carcinomatous peritonitis, the clinical course in neoplasm is relatively more rapid. That paracentesis in carcinomatous peritonitis hastens the fatal issue may, unfortunately, be of diagnostic value. This peculiarity of carcinomatous peritonitis is often emphasized, but the same feature is seen in other maladies. In chylous ascites, repeated punctures hurry the end. Again, in cases of apparently mechanical ascites where between one and two hundred punctures have been made, Hale White's observation, that death in liver cirrhosis is near after three or four punctures, is frequently confirmed.

A final decision regarding the character of the fluid from a single puncture is not possible, since the fluid may be encapsulated. In the case of Heidenrich, for example, each of 20 odd separate sacs was filled with fluid differing from that found in the others; in one was clear serum, in another paler fluid, again, the effusion was brown, purulent, thick, or sanguinolent (v. Græfe's u. v. Walther's *J. d. Chirurgie u. Augenheilk.*, B. 20, St. 30).

Nicholls in an excellent monograph entitled, "A Somewhat Rare Form of Chronic Inflammation of the Serous Membranes (Multiple Progressive Hyaloserositis)," Royal Victoria Hospital reports, Vol. 1, No. 3, discusses the "icing liver," zuckerguss leber, another cause of ascites. The following differential table is copied in full from his monograph:

TABLE FOR DIFFERENTIAL DIAGNOSIS.

Special Features.	"Zuckerguss-leber."	Atrophic cirrhosis of liver.	Chronic tubercular peritonitis.	Carcinoma of peritoneum.
Age.	Occurs about middle life or later.	Oftenest about middle age.	Commonest between ages of 30 and 40.	Occurs late in life.
Sex.	Both sexes equally liable.	More frequent in males.	Predominates in females.	More frequent in females.
Previous history.	Often a history of acute pericarditis or perihepatitis.	History of alcoholism, syphilis or digestive disturbances.	Often a chronic cough, diarrhea, or genital tuberculosis.	In some cases a history of cancer of stomach or ovaries.
Alcoholism.	No influence.	Frequently present.	Unimportant.	Unimportant.
Syphilis.	No influence.	Occasionally.	Unimportant.	Unimportant.
Heredity.	No influence.	Unimportant.	May be family taint.	Unimportant.
Incidence.	Acute becoming chronic or insidious from first.	Insidious.	Onset may be acute or insidious.	Insidious.

Chronicity.	Cases last for ten years.	May last for years.	Prolonged.	Fairly rapid course.
Fever.	Generally absent except during exacerbation or some complication.	May be afebrile; when present is slight.	Usually slight, often absent.	Rarely absent; due to complication.
Pain.	Indefinite and trifling.	Trifling.	Apt to be troublesome.	Variable.
Digestive disturbance.	Trifling or none.	Constant; dyspepsia, nausea, vomiting, gastric hemorrhage, melæna.	Fairly common.	Often marked.
Ascites.	Constant and extreme.	Constant.	Never extreme, may be absent, may be hemorrhagic.	Moderate grade; may be hemorrhagic or pseudochylous.
Anasarca.	Constant but slight.	Relatively slight.	Trifling.	Slight.
Jaundice.	Absent in pure cases.	Occurs in 27 per cent. of cases.	May occur exceptionally.	Common when liver is enlarged.
Liver.	Not cirrhotic; at first enlarged, then small; smooth.	Cirrhotic; at first enlarged, then small and warty.	Often enlarged.	May be enlarged, with nodules.
Spleen.	Gradual enlargement.	Gradual enlargement.	Nothing special.	Nothing special.
Omentum.	Thickened and contracted.	Normal.	Often matted up.	Often matted up.

iv.

Is the ascites due to local disease of the peritoneum or to subperitoneal affections, other than inflammation? Above other causes, tumors demand early consideration. Miliary tuberculosis of the peritoneum, as distinguished from tubercular peritonitis, may cause a hydrops which is not inflammatory. Carcinosis of the peritoneum causes hemorrhagic or purely serous transudates, demanding distinct differentiation from genuine carcinomatous peritonitis in which the specific gravity may rise to 1.020 or 1.022. Literature contains no reference to practical clinical separation of carcinosis of the peritoneum and carcinomatous peritonitis. In carcinomatous peritonitis nodules appear, but I have made autopsies upon cases in which tumors in the abdomen did not preclude a clinical intra-vitam diagnosis of tubercular peritonitis, with post-mortem confirmation.

In a case of adipose ascites of tubercular origin, reported by the writer (Chylous and Adipose Ascites, *Medicine*, August, '95), there were tumors of considerable size which were recognized clinically and might have been confused with genuine neoplasm. A second instance of tubercular masses resembling an actual tumor, in which the clinical diagnosis was made, is the following:

The patient was a Swede, aged 36, from whom little history could be elicited, except that for three months he had emaciated, lost muscular power, and suffered from intestinal irregularities. His urine was negative. The thorax was negative, except for complete synechia of the right pleural cavity—a point of differential value in considering tubercular, versus carcinomatous, peritonitis. He was emaciated and the skin was dry. The relative prominence of the abdomen contrasted with the thin arms and legs and narrow thorax. There was tympany in both flanks, as a fairly wide zone, and over the entire antero-mesial portion of the abdomen absolute flatness, was found. On palpation a marked resistance existed which was not muscular. The flatness did not change with position, and a trocar introduced into its midst gave a sanguineous fluid of 1.022 specific gravity, and hence 5.4 per cent albumin. The temperature ranged between 99 and 101.6. Rectal exploration determined a large, broad, hard, nodular mass in the right inguinal region, which was not in the rectal wall, but beyond and separate from it. The localized peritonitis, bloody serum, and progressive cachexia suggested neoplasm, but the old pleural adhesions, the temperature, and localized peritonitis, collectively considered, also warranted a diagnosis of tubercular peritonitis, against which the hard extensive nodular character of the formation found per rectum did not successfully contend, insomuch as, in the case of adipose ascites already mentioned, large, hard, tumor-like masses in the same region were proved at autopsy to be relics of an ancient caseated tubercular exudate.

The autopsy proved that the pseudo-neoplasm was tubercular peritonitis with very thick exudate and massive adhesions, confirming the clinical diagnosis.

In intestinal obstruction, as volvulus and incarceration, fluid may be extravasated. According to Braun it is rare in intussusception, although we have observed it in this affection in five instances. Fluid generally speaks against intestinal obstruction by foreign bodies and circular tumors of the intestine.

Tumors other than peritoneal cause ascites. Uterine fibromata produce hydroperitoneum, which is not usually great, is lemon-colored, and but rarely sanguineous. There is no relation between the size of the tumor and the amount of fluid transuded, since very small uterine myo-fibromata may excite considerable peritoneal effusion. There is, nevertheless, a direct relation between the malignancy of the tumor and the amount of the fluid found (Terillon). As a general statement,

ascites is infrequent in uterine tumors (Cruveilhier) but, when observed, is most common in adeno-myoma (Freund). According to Pozzi, ascites is rare in ovarian cysts, yet Terrier observed it in 35 per cent. of his cases. It is seen in papillomatous cysts which grow externally to the cyst, sometimes with peritoneal metastases. In glandular cysts whose walls rupture by fatty degeneration and pour out their contents into the abdominal cavity, serum is secreted by the peritoneal surface because of the irritation, even though the ruptured cyst be very small (Quénu). The fluid contained in cysts contains more solids (60 to 70 per mille.) than does the ascites, e. g., of renal disease (25 per mille.—Méhu). Championnierre never saw an ovarian cyst complicated with ascites recover, although Pozzi writes that his experience must be regarded as exceptional. Ascites is probably most often observed in cases of this general class in solid ovarian tumors. In a case e. g., of ovarian sarcoma, successfully removed by operation, an ascites existed, which disappeared after the operation and has remained absent for six years. The interesting point in this case was the simple peritonitis, with effusion of an exudate whose specific gravity was 1.024. That the exudate was not due to malignant peritonitis, is proven by the non-recurrence of the disease anywhere in the abdomen, and by the permanent absence of ascites.

(A discussion of adipose, chylous, or chyliform ascites is intentionally omitted.)

RECAPITULATION.

1. In general the sum total of physical signs of ascites, is unequivocal.

2. The individual signs are not infrequently ambiguous. Tympany, e. g., may be elicited by heavy percussion from contiguous intestines or may be present over the entire abdomen on account of physical laws as yet not finally determined.

3. Ascites may be free, encapsulated, or both conditions may be coincident.

4. Ascites may be mechanical, vascular, due to stasis.

5. It may be due to increased permeability of the blood vessels, i. e., hydræmia or cachexia.

6. A third cause is inflammation.

7. A high specific gravity and a high percentage of albumin usually indicates exudation, although there is no close nor invariable correspondence between them, and no absolute physical line can be drawn between the fluid of exudation and the fluid of transudation.

8. The microscopical examination may determine the character of the fluid and again the variety of the inflammation.

9. Operation may be the only method of final diagnosis.

10. Hyaloserositis must be considered (see Nicholl's table).

11. Ascites may cover small ovarian or other pelvic growths.

INSANITY FOLLOWING SURGICAL OPERATIONS.

By RICHARD DEWEY, A.M., M.D., Wauwatosa, Wis.

In presenting some thoughts on insanity as a sequel of surgical operations I wish at the outset to remark that in such cases an operation is almost invariably to be regarded as only one of several factors, and that in and of itself an operation can scarcely cause insanity—since a large number of other circumstances is nearly always to be taken into account as contributing to the result—and the value of my paper, so far as it has value, will be in aiding toward a better estimation as to what cases of operation are in danger of being followed by insanity, and what safeguards may be adopted to avoid so untoward a result.

This subject is one which formerly received little or no attention. Five years ago, when I presented to the American Medico-Psychological Association a clinical history of a large number of cases [1] collected from colleagues and encountered in my own practice, the matter seemed practically new to the profession at large, though some striking studies of the same sort had been presented in England and by Continental writers, and at least one in the United States. A year later I presented a tabulated series of cases [2] in the Chicago Medical Society, and at the St. Louis meeting of the American Medico-Psychological Association, which aroused rather animated discussion. There were 46 cases in the table—8 of my own and 38 communicated to me by colleagues. Since that time with increasing frequency cases have been reported. The previous studies referred to were those of J. C. Simpson of Edinburgh, who presented a comprehensive clinical and statistical study of "Post-Operative Insanity," [3] and of Moyer, who discussed it ably in a paper, "The Nervous and Mental Phenomena following Operations." [4] Doubtless other early studies would be disclosed by a full

(1) Transactions of the American Medico-Psychological Ass'n, '97,—"Insanity following Surgical Operations," page 239.
(2) Transactions of the American Medico-Psychological Ass'n, '98,—"Some Remarks on Insanity following Surgical Operations with Report of 46 cases," p. 223.
(3) Journal of Mental Science, Jan., '97.
(4) Medicine, June, '97.

review of the literature for numerous cases, and reports have appeared since attention was directed to the subject, and very recently an editorial in the *Journal of the Amer. Med. Ass'n* [5] occasioned by a paper of Dr. O. B. Will [6] has emphasized the importance of attention to the mental state by the surgeon when contemplating an operation. I therefore venture to bring the subject forward at this time, quoting to some extent from my former article, and presenting some new cases.

In estimating the relation between insanity and surgical procedure some of the elements that must be taken into account are the following: First, the patient's condition and heredity; for it should be understood (though it seems not to be generally appreciated by the profession) that almost all who become insane from *any* exciting cause have in themselves a *deeper seated* predisposing cause, to-wit: their own constitution and inheritance. In other words, no possible combination of outward circumstances will produce insanity in certain temperaments and constitutions (there may be real or apparent exceptions to this statement where certain toxic conditions from auto-toxins or drugs operate to produce delirium, though even the tendency to delirium is often a matter of neuropathic constitution), because the predisposition to insanity is lacking, while comparatively slight causes will suffice in an unstable or neurotic temperament.

In all cases then the neuropathic constitution is to be taken for granted, as *sine qua non,* and this being given, one or more of the following may complete the chain.

1st.—The patient's physical condition *at the time,* including constitutional disease, like arterio sclerosis, kidney or heart complications, and anæmic or toxæmic condition from the above or other causes; also sepsis growing out of the puerperal state, or in operations on the genitalia, where antiseptic conditions are unattainable.

2nd.—An especially important condition at the time of operation may be the *mental state* of the patient. The presence of a neurasthenic or psychopathic state or tendency, also the hysterical diathesis, also depressing emotions, as anxiety, fear, etc., to a pathological degree (though, of course, always present to some extent), are now recognized as exceedingly important in their influence, as cases cited will illustrate.

* Mental shock, analogous in its effect on the mind to physical shock on the body.

(5) Journal Amer. Med. Ass'n, Nov. 1, 1902.

(6) Peoria Med. Journal, Oct. 1902.

* Dr. Will in certain cases would avoid operating on Friday, recognizing the real importance of a hopeful and confident state of mind in superstitious patients.

3rd.—The effect of the anæsthetic. It is not necessary to cite the various ways in which the anæsthetic may depress or injure the brain or nervous system directly or indirectly.

4th.—The effect of drugs aside from the anæsthetic. Drug and alcoholic addiction of long or short duration. The effect of sedatives or narcotics often given in large quantities in connection with the patient's state (hyoscine, morphine, cocaine, etc.). Formerly atropine in eye operations undoubtedly at times caused or intensified delirium. Here belong also the possible effects of dressings used on the wound. Iodoform has more than once been recognized as a cause of delirium and insanity, and bichloride and carbolic solutions may also be toxic in their effect.

The data which are desirable in order to study and elucidate insanity occurring after operations are the following: 1st. The age, sex, occupation, habits, residence, civil conditions, and nativity. 2nd. Any material facts relating to injuries or disease affecting the patient bodily or mentally prior to the operation, and the condition—physical and mental—at the time of the operation. 3rd. The usual data of the operation—its nature and extent, the duration of anæsthesia and of operation, the kind of anæsthetic used and how borne. 4th. The dressing used, and the process of healing. 5th. The length of time after operation before mental symptoms appeared and the form they assumed. 6th. The duration and outcome of the mental disease. 7th. The hereditary tendencies, if any.

Some of the related conditions I have found to be present in my studies of these cases may be summarized as follows: Insanity in a neurasthenic patient developing from the use of an anæsthetic alone without operation; also after trivial operations. Insanity from traumatic causes, not directly affecting the brain (as fracture of a bone), both with and without operation. Change in the *form* of mental disease after an operation. Apparent recovery from insanity after anæsthesia for uterine examination. Recrudescence of insanity after castration. Insanity probably from vascular disease, though excited by an operation. Insanity after perineorrhaphy with sepsis, mental worry, neuropathic taint, diabetes, and eczema—all operating together in a patient previously a victim of morphine habit many years before. Also a case of insanity after perineorrhaphy in a healthy woman—apparently from anæsthetic and deprivation of water—all these cases taken together serve to illustate how complex a problem is insanity presenting itself after operations.

Some of the elements or factors of these cases may now be considered. One of the first relates to the *kind of operation*. Experience

has raised the question whether some classes of operation are not more likely than others to be followed by insanity—as operations on the genito-urinary organs or alimentary tract. First, because these operations in some cases cannot be wholly aseptic, e. g., operations for lacerations, urethral, vesical, and rectal operations. Second, some of these are operations depriving the economy of the essential organs—the ovaries and testicles, loss of these latter being important from their influence on bodily nutrition and metabolism, and likewise the mental effect upon many men and women of deprivation of what to them seems an essential part of manhood and womanhood. Third, the implication of the peritoneum with greater accompanying shock. Another class of operations in some cases liable to be followed by mental symptoms as would seem, are eye operations, especially for cataract—perhaps from closer proximity and relation of eye to brain as well as from the effect of atropine. Another operation in which tendency to mental disturbance is disproportionately manifested is that for mammary disease, both malignant and non-malignant. In the 46 cases of my table, 4 were cases of carcimona of the breast, and excepting operations on the generative organs, no other form of operation was as frequent among the cases collected by me.

In reference to the other operations in my table I would say of the 46 cases, 29 were operations on the female genitalia, and of the whole number only 6 were located anywhere outside of the genito-urinary or alimentary tracts. Only one of the 46, however, was an eye operation. In regard to the development of insanity after ovariotomy one may remark that a certain contingent of these cases consist of highly neuretic women, naturally prone to insanity, in whom any profound disturbance of nervous relations may produce it. It is a question often of accident as to whether insanity follows an operation or an operation follows insanity, undertaken as the operation often has been, with the hope of cure. Such patients on the one hand may be operated upon to relieve insanity, and on the other hand, may be thought to have been made insane by operation, while the most efficient factor is lost sight of in both instances, viz., the *nervous instability* of the subject.

A remark made three or four years ago by Dr. Paul Mundé at a meeting of the New York Society of the Woman's Hospital, may here be quoted, "The results of oophorectomy in insane women have not been favorable." (7)

In five of the cases in my table the insanity was present imme-

(7) American Gynæcological and Obstetrical Journal, Jan., 1898, p. 55.

diately at the end of anæsthesia, though this does not prove the anæsthetic to have been the cause, and in eleven of my cases the anæsthetic was said to have been "well borne." It is to be regretted that the length of the anæsthesia is only given in nine of the cases. In three, it was one-half hour; in two, three-fourths of an hour; in one, one hour, and in one, ninety minutes.

The question of the influence of sex naturally presents itself. On first examining the question the striking preponderance of women over men is apparent. In the table of 46 cases, only 4 are males, though these cases are gathered from private practice and from institutions receiving both men and women, and only 6 of them came from a purely gynæcological practice. Sears [8] of Boston found that of 167 cases, 102 were women, but if strictly gynæcological cases were excluded, there was little difference in the sex affected. He found on the other hand that in 59 eye cases, only 24 were women. Similar was the experience of Kiernan, of Le Denty and of Simpson, from whom I quote the above figures. [9]

It would seem that the reason for the preponderance of these cases in women was simply the very large proportion of gynæcological operations, and if the genital organs of men were as frequently operated on, the number of such cases in each sex would perhaps be quite nearly alike.

As to septic and toxic causes it may suffice here to recall the fact, that in patients in a septic state from any cause previous to the operation, or in operations on perineum, rectum, etc., there may be an autotoxis of brain producing insanity. Also in this category belong cases where toxic absorption from the dressings occurs. There were six cases where iodoform appeared to be an important factor. In one case (an operation for cancer of the breast, done by Dr. Christian Fenger), the dissections were very extensive and iodoform was lavishly used, and other causes for insanity seemed to be lacking.

The *mental condition previous to the time of operation* is a thing scarcely taken into account by surgeons, and I suppose all who have had much experience with insanity have seen cases in which it really existed before the operation, either actually or potentially, without being recognized; like one patient who had delusions actively developed before the attempt at curettage and went wildly insane with the first whiffs of the anæsthetic. This patient regained her mental health during a few weeks under my care, and the operation was then successfully done. Several factors were here concerned—a debilitated bodily

(8) Boston Medical and Surgical Journal, 1893, page 642.
(9) Journal of Mental Science, Jan., 1897.

state, great fear and apprehension, and finally the anæsthetic. The case further illustrates how under more favorable circumstances the same operation, which in the first instance came out so unfortunately, may be done upon the same individual without evil results.

I give now some facts learned in the course of my study in 1898. Dr. Fred'k Peterson, of New York, had observed a number of cases, three-fourths following ovariotomy and several after simple operations like anæsthesia for extracting teeth. He thinks the mental state was largely due to the anæsthetic. In this connection I may mention Dr. Granger's case of a woman who after ether for pulling teeth became insane and killed her child; also a case of my own of insanity following cocaine locally and the extraction of 23 teeth in a hard-working merchant of 65, with thickened radials and incomplete arcus senilis, married, six healthy children, good habits, no neurotic heredity, or venereal disease. Patient was never the same after the cocaine, failed mentally, became gay, disposed to drink and erotic, irascible and inclined to wander about, finally becoming maniacal and confusional. Dr. E. C. Dudley, of Chicago, had two cases occurring after operation done about time of menopause—both recovered. One was perineorrhaphy and trachelorraphy; the other removal of right ovary and tube. Dr. Dudley does not think insanity follows gynæcological operations oftener than others. Dr. J. W. Streeter, of Chicago, in 500 laparotomies and 100 vaginal hysterectomies had no case of insanity. In a few cases he operated on pelvic organs for insanity, but did not find positive cure resulted. Dr. Bayard Holmes, of Chicago, reported one case from a large gynæcological practice. Dr. A. J. Ochsner, of Chicago, from an extensive surgical practice, reported four cases of insanity and three others previously insane and recovered in which a relapse occurred after operation. Dr. J. B. Murphy, of Chicago, had not had insanity occur after operation. Dr. N. Senn, of Chicago, wrote me he had never encountered a case of insanity that he could attribute to an operation. Dr. John Ridlon and Dr. A. E. Hoadley (orthopædic surgeons of Chicago) had seen no cases. Dr. Jos. B. Bacon, of Chicago (rectal surgeon), reported that he did "not operate on cranks." In closing I add here two cases not heretofore reported.

Case 1, Mrs. W. In November, 1901, I saw in consultation in a hospital in Milwaukee a married woman, 35 years of age, a highly neurotic individual, who had a sister of the same constitution, and who had previously been under my care. This patient's father was asthmatic and rheumatic, and died at 40 of lung congestion. The mother died at 30, having been ill with some pelvic complication for a a year after confinement. Patient had three children living—one affected with nocturnal enuresis—and had had two miscarriages. She

was always nervous, and, when a child, subject to night terrors: married at 16, had miscarriage in fourth month at 17, very sick and always nervous after. Seven weeks previous to my visit had miscarriage; had come to hospital for treatment for menorrhagia, had curettement. Salpingitis developed later, and both tubes were removed. Operation well borne as far as physical symptoms were concerned, but great restlessness and anxiety developed. Patient was constantly in fear of going insane and had great precordial distress, thought she was going to die, was in almost constant state of frenzy for some days, was then removed to Sanitarium, and under appropriate treatment speedily improved and in six or seven weeks was usually well, but still, of course, highly nervous.

Case 2, Mrs. R., aged 43, married, three children, healthy but neurotic. Father insane some years ago, recovered. Mother neurotic. Maternal aunt had puerperal mania. Patient said to have had "hip disease" at 14, but recovered. Had an attack of hysterical mania lasting two months four and a half years ago following severe attack of la grippe, which seemed to be the exciting cause, was suicidal, refused food, had delusions of poison, also erotic excitement, falling into stuporous condition at times, hallucinations of sight and hearing. Came under my care in Sanitarium, and in one month made good recovery; was well three and one-half years, but for a year previous to coming again under my care had suffered from menorrhagia and developed symptoms of nervous exhaustion. Menorrhagia persisted for several months. Examination showed uterine fibroid. Abdominal section was made and uterus and ovaries removed in November, 1901. Ether was the anæsthetic; the operation was tedious and one and one-half hours long. Patient suffered much from shock and pain for two weeks, then mental confusion and delusions appeared. Lost sense of locality, seemed to go through pangs of confinement and thought child was in bed with her. Would have lucid intervals for a time. In January grew worse, hallucinations of sight and hearing were marked, erotic excitement present also, delusions of persecution, then taking a religious turn. At end of January admitted to Sanitarium: thought herself a queen and her physician emperor. At times very irascible and abusive, sleep broken, hypnotics required, appetite capricious, regardless of personal appearance (though most fastidious when well), thought people about were bad characters. Gradually became more rational. February 8th clear on most subjects but a little grandiose, thought her voice finer than ever before, sang in parlor, in recitative style a poem from a magazine, but steadily and quite speedily returned to normal self. February 16th, '02, was quite herself again, returned home and has since remained well to date (November, 1902).

Both of these cases show the numerous complications, one or more of which are apt to be present when insanity develops after an operation.

I wish to close by laying stress on one therapeutic indication to be drawn from the foregoing facts, and that is the advantage to be gained to the patient from careful attention—on the part of the surgeon—to the nervous and mental state of the patient, and to conditions that may

possibly cause the development of insanity. Some of these are: Marked neuropathic or psychopathic heredity, a condition of nervous shock, stress or anxiety, hysteria, any toxæmic condition, malnutrition or anæmia, a previous attack of neurasthenia or insanity which may be overlooked unless inquired into, the existence of alcoholism or drug habits.

At the time of the operation the anæsthetic may be badly borne, or kept up so long as to be injurious. The dressings also may be harmful, especially if iodoform is used over large surface.

It is true that cases of insanity after operation are few and far between—also that the operation is only a remote cause, nevertheless the occurrence of these cases is most undesirable and may sometimes be forestalled by carefully estimating the conditions or taking the precautions which prudence would dictate, and often there are cases in which the surgeon would do well to have the advice of an alienist, at least until the subject of insanity is more thoroughly taught than is at present the case—even in the best of our medical schools.

ARTHRITIS DEFORMANS IN CHILDREN.

By I. A. ABT, M.D., Chicago.

No more appropriate introduction for a short treatment of this subject can be made than to quote the words of Garrod (20th Century Practice of Medicine, Vol. II). He says: "The time is not yet ripe for any adequate description of arthritis deformans as it occurs in children, for the whole subject of the chronic joint diseases of children constitutes a chapter in clinical medicine which still remains to be written."

While the number of reported cases is not great, nevertheless isolated cases from various quarters are being noted in the journals and year-books. As early as 1874 Cornil and Beau reported two cases. About the same time Louis Smith of New York reported a case in which he observed recovery from the disease. Moncorvo, and later Johannessen published elaborate monographs and case reports on the subject. All authors are agreed that in children more frequently than in adults the disease begins as a subacute process.

The disease seems to occur in every climate, but more particularly in those regions where moisture and extreme cold are prevalent. These conditions favor not only the occurrence of the disease, but ap-

parently also, the relapses. In reading the reports of the cases one is struck by the fact that most of the children who fall ill with this disease belong to the poorest classes and live under the most unfavorable hygienic conditions.

G. F. Still, who has collected and reported a large number of cases, classifies arthritis deformans, or as he prefers to designate it, rheumatoid arthritis, into three varieties. The first variety in children differs in its clinical symptoms and its morbid anatomy from the same disease which is described in adults. This variety consists of a chronic, progressive enlargement of the joints associated with enlargements of the lymphatic glands and spleen. The causes of this condition are unknown. Heredity seems to play no part in its causation; as has already been remarked, bad feeding and privations of various kinds were the most prominent factors. The disease usually begins before the second dentition, and it has been reported more frequently in girls than in boys. The onset of this variety is usually insidious, with stiffness of one or more joints. Occasionally the onset is sudden, marked by high fever, which may last for a variable time. Chills or rigors have been observed. The character of the joint enlargement is of importance. The bony irregularity of arthritis deformans is wanting even when the disease is considerably advanced. In all of the cases which were observed by Still, the joint enlargement suggested rather a thickening of the tissues around the joints than changes in the bony or cartilaginous tissues. Bony grating is, as a rule, not observed, and effusion is not a marked feature. Tenderness is only slightly present. The joints that are first involved are the knees, wrists, and cervical spines. The fingers, and later on the toes, become affected. The disease is probably never limited to one joint, and is almost always symmetrical. There is no tendency to suppuration nor to bony ankylosis. There is usually muscular atrophy with a tendency for the muscles to contract. The enlargement of the lymphatics in this variety of the disease is a constant symptom. The glands most commonly affected are those which lie in proximity to the joints which are involved. The glands are hard and do not tend to break down. The spleen is always palpable and its size is proportionate to the joint involvement and the number of glands involved. It is agreed among all those who have seen and reported these cases that endocardial inflammation does not occur, though pleuritis and pericarditis of a low grade do occur. The progress of the disease is slow and in time tends to remain stationary, leaving the individual in a helpless condition, owing to the severity of the joint involvement.

At times exophthalmus has been noted in connection with these cases, with a rapid pulse. A case of this variety of arthritis deformans has been reported by Lempe (Chicago Medical Recorder, September, 1902). It was my privilege to see this case through the kindness of Dr. Lemke.

The little fellow, who was eleven years old, suffered mostly from involvement of the wrists and hands. The elbows and shoulders were involved, though the motion was fairly well preserved. The knee joints were much enlarged and slightly distended with fluid. The peripheral glands were nearly all enlarged, some to a very marked degree.

Herter (New York Medical Journal, April, 1898), considers that our knowledge of the etiology of this disease is still very limited. He believes that unquestionably certain important similarities exist between the lesions of arthritis deformans and those associated with the affections of the posterior nerve roots. The fact that there are muscular atrophies, that the skin is occasionally glossy, that the muscles are rigid in cases of arthritis deformans, seem to point, according to this observer, to the nervous origin.

But we are still much in the dark regarding the influence of lesions in the posterior ganglia or the posterior columns of the cord upon changes in the bones or joints. In some cases the disease has appeared to follow closely upon shock.

Herter regards the condition as one in which there are marked nutritive changes acting in connection with some peculiar constitutional condition. He has found that the total acidity of the urine is increased and that excessive putrefactive changes are present in the intestines of these individuals.

The second form of rheumatoid arthritis, or arthritis deformans as it occurs in adults, is not frequent in children. Charcot and Weil have described this form; Koplik described an interesting case; Manges has described a case; Osler, four cases, and Henoch, five cases. This form of arthritis deformans, or rheumatoid arthritis, as it is spoken of by the English writers, generally begins after the commencement of the second dentition. Its causation in children is as obscure as it is in adults; poverty and unsanitary conditions were strikingly absent in some of the cases. The joint affection is multiple in contradistinction to the monoarticular arthritis of old age. The trouble is not confined to the smaller joints; in some the larger joints are affected first. The occurrence of Heberden's nodes is very rare in children. It has been observed by various students of this disease

that the great toe of each foot becomes increased in length. Johannessen called attention to this, as did also Diamantberger and others.

Referring briefly to the course of this disease, most of the cases have been said to occur after exposure to wet and cold. The involvement of the joints becomes progressively worse; in a large number of the cases, ankylosis develops and complete disability follows after a period of months. Pain is a very marked symptom and frequently interferes with the sleep. The joints of the upper as well as of the lower extremity become involved, and after repeated attacks ankylosis and limitation of motion results. The synnovial membranes and the cartilage of the joints disappear. The ends of the bones assume ivory-like hardness and present osteophytic growths at their margins. Atrophy of the muscles follows closely upon the joint involvement. Koplik, referring to a case which he has described, says that when the disease has fully developed the condition is pitiable. In his case almost every joint in the body, including those of the cervical vertebræ, was involved. The temporo-maxillary articulations, shoulder, elbow, small finger joints, hip, knees, ankles, and toes were all affected. The patient slept in a semi-upright position, and had to be carried from place to place.

This form is distinguished from the first variety already referred to, by the absence of enlargements of the glands and spleen, by the presence of bony thickening and lipping about the joints, and in some cases by the presence of bony grating.

In speaking of the first variety of arthritis deformans, the theory of its nervous origin was alluded to. Nothing more is known concerning the etiology of the second variety. Two hypotheses as to its causation are considered. First, that the disease is caused by a lesion in the central nervous system which causes irregularity in bone growth and muscular atrophy. This theory is advanced by Charcot and Weil. The second is the infectious theory, though this is invoked to explain more particularly the cases of the first variety. The enlarged spleen with hypertrophied glands and the daily variation of temperature, give some credence to this view.

The treatment which is advised in these cases is that the children should be placed upon iodide, and where possible, removed to a warmer climate. In any event, the conditions of hygiene should be improved.

The case report which follows, belongs to the second variety, and the accompanying photographs illustrate the changes in the joints.

The patient is a male child, 10 years of age. There is no history of family or hereditary disease. He had whooping cough when a baby, and parents say that for some time he has been extremely irritable. One year ago he was struck in the abdomen by a falling ladder; he thinks that abdominal pains, from which he suffers, are due to this accident. The patient's habits are good, says that he occasionally drinks a small quantity of beer.

The history of the present disease as told by the father, is the following: About two years ago the father, who is an expressman, took the little fellow for a ride in an open wagon while he was making one of his trips. The journey lasted longer than the father had anticipated, and they did not return home until late in the night. Before their return the two were overtaken by a severe rain storm. The little fellow was drenched and remained exposed to the storm for two hours.

Two weeks subsequent to this drenching he began to complain of pains in the abdomen, and at about the same time was seized with pains in the joints. These pains began first in the knees; later his wrists were involved in the same way. He had fever. The joints were painful, red, and swollen, he slept poorly, was unable to bend his knees. His appetite was poor. He maintains that he was able to walk about some during the time that he was acutely ill.

The acute condition already referred to lasted about six weeks; the enlargement of the joints increased. He is able at present to walk about, though there is stiffness in the knees, ankles, and wrists. He complains occasionally of diarrhea and frequent disturbances of digestion.

Examination: The examination shows a poorly nourished anemic boy. He is of a decidedly nervous temperament. He lies quietly in bed, and is able to walk about, a slight stiffness at the knees causes him to assume a somewhat shuffling gait.

Respiration is normal. Pulse regular and of moderate tension. The skin is clear, no eruptions are observed.

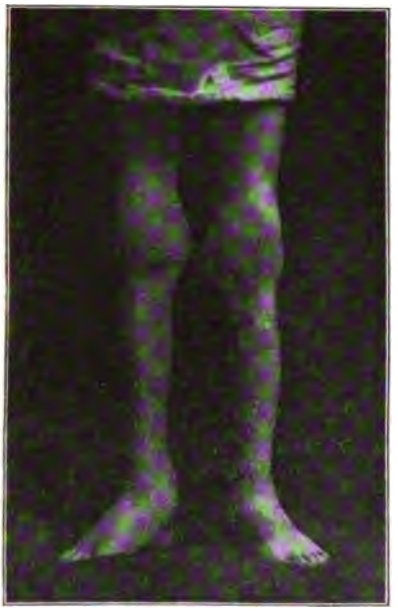
Head: The head is quadrilateral, bosses over parietal and frontal eminences indicate a previous rickets. Face is pale, eyes and ears negative. There is a slight ulceration to be observed in the left angle of the mouth. Teeth: Lower canines and bicuspids have fallen out. The lower incisors are slightly notched. The mucous membrane of pharynx is hyperæmic, the tonsils are enlarged. The neck is negative. Chest: Lungs, negative. Heart: Apex beat is in the fourth interspace, about 1 c. c. inside of the nipple line; upper border is at the third rib, the right border at the right edge of the sternum. The second pulmonary sound is slightly accentuated. The aortic second sound is weak. The lower edge of the liver is palpable on deep inspiration.

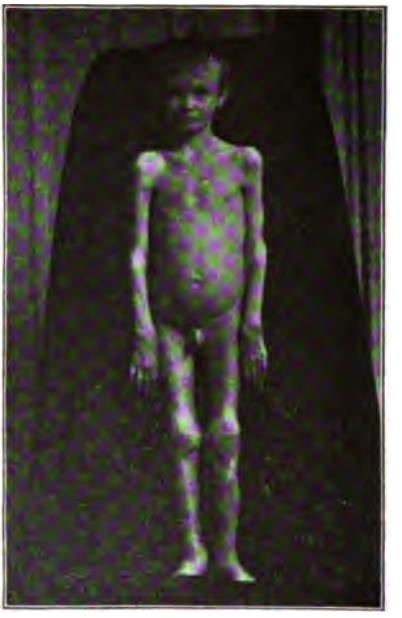
Spleen is not palpable.

Extremities: Wrists swollen. No redness nor tenderness. Extension, flexion, and lateral motion normal. Cannot close hands completely. Enlargement at wrist seems to be partly due to increase in size of bone, and perhaps a slight effusion. Second phalangeal joints of index and middle fingers of left hand slightly enlarged.

Knee swollen, 26 c. c. in circumference; considerable effusion into joints. Patella clicks present. Condyles of lower edge of femur are greatly enlarged, especially internal condyles. Upper end of tibia also enlarged. Flexion at knee is good, extension not complete. Ankles slightly swollen. Some limitation of motion.

Spine: Mobility normal. Hip: Normal. Slight creaking over affected joints. Glands: Inguinal and axillary glands are palpable.





THE RECOGNITION AND CARE OF CATARRHAL DISEASE OF THE ACCESSORY SINUSES.*

By HENRY B. HITZ, M.D., Milwaukee, Wis.

Having been requested by the secretary to present a paper at this meeting, it has occurred to me that it would not come amiss to touch upon a rather prevalent condition that is frequently passed by unrecognized, viz.: catarrhal disturbances of the accessory sinuses, giving some details of diagnosis and treatment, and illustrating by means of some typical cases taken at random.

It may possibly not be generally appreciated that many of the cases that appeal for relief from floods of catarrhal discharge are really victims of sinoidal disease, rather than of simple inflammatory

*Read before The Milwaukee Medical Society, Nov. 25, 1902.

disturbance in the nasal cavities proper. This is most true of those cases having no apparent discomfort upon arising in the morning, but who—after several hours of activity—begin discharging large quantities of mucous or muco-pus which frequently comes away in such masses as to make common the exclamation, "where does it all come from!" And this is the problem with which we are confronted—"where does it all come from," and how are we to prevent it? To determine its origin is largely a problem of elimination. Excluding at the outset the large number of cases directly attributable to hypertrophic or intumescent condition in the nasal cavities proper, prompt relief from which can be had by properly directed treatment, there are still a large number of these cases in whom the failure to get the desired relief is indicative of deeper seated trouble, which generally means involvement of one or more of the accessory sinuses resulting usually in a discharge of a mucoid or muco-purulent type. When copious discharge occurs from but one nostril, with or without fœtor, one need not hesitate to ascribe its origin to sinus involvement, the question being merely the location and extent of the lesion. Briefly considered, the means of diagnosis consists in careful questioning as to pain and swelling and, if these are present, their location and character, the quantity and quality of discharge, the position and conditions when it is most copious; and then follow with a careful and thorough inspection in the front and rear of the nasal cavities, first under existing conditions and later under local anæsthesia, or if preferred, a spray of adrenalin, and thorough cleansing. Then after determining the presence or absence of foreign bodies or adventitious growths, careful search is made in various localities for the presence and source of retained muco-pus. This may be done by means of a small syringe having a long, slender canula, and containing a weak solution of hydrogen peroxide. By properly bending the point of the canula, it can be passed into almost any sinus opening. The presence of polypi greatly aids in directing attention to the affected area and their removal will usually be necessary before the opening can be reached. This is particularly true of the ostium maxillare. Discharge exuding from beneath the middle turbinal body is usually indicative of disturbance in the maxillary antrum, though this is by no means essentially so, as instances are frequently met with in which the ethmoidal cells have ruptured into the middle meatus.

Discharge appearing around the anterior end of the middle turbinal, usually indicates disturbances in the frontal or ant. ethmoidal cells, the openings of which lie close together just forward and above this body, while muco-pus from the posterior ethmoidals and sphenoid-

als must be looked for near its posterior end, and between it and the opposing septal wall. Position sometimes determines the presence or absence of discharge, providing there be no other mechanical cause of obstruction, the frontal sinuses discharging more freely when the head is erect, the sphenoidal when the head is held face downward, and the antrum when the head is inverted. These rules are, however, not to be entirely relied upon, as individual variations are extremely common. The use of the diagnostic lamp is a valuable negative aid in the exclusion of antral or frontal diseases, but as a positive aid in determining the presence of pus, it is unreliable, transillumination being easily interfered with by thick bony walls or intumescent tissues. Pain, headache, and external swelling are rare, except in acute conditions, but when they do occur are of considerable help in directing one's attention to the affected area. Toothache, for example, without any apparent intrinsic cause, accompanying a copious discharge from the corresponding nostril, would naturally suggest antral involvement. In a case of suspected antral disease in which—though rare—the ostium maxillare is unapproachable, puncture, through the inferior meatus with a small curved trochar, is a simple, comparatively painless and positive means of locating fluid accumulations. Snaring off the anterior end of the middle turbinal is usually sufficient to locate a discharge from the anterior ethmoidals or the frontal sinuses, and in the case of the latter is frequently the only treatment necessary to bring about cure. Removal of the posterior half will generally expose to view the posterior ethmoidals and more easily allow manipulation of the sphenoidals, but in persistent chronic suppuration in the ethmoidal honey-comb complete removal of the middle turbinal is essential.

When satisfied as to the nature of the disease, and of the area involved, the character of the treatment necessary becomes a matter of importance. This should consist, first, last, and always, of re-establishing perfect drainage, the removal of accumulated septic masses, carious bone, foreign bodies, and granulations. As far as possible this should be done through the natural passages, but if this be impossible, several radical means are at our command, and should be resorted to without hesitation. When the disease is confined to the maxillary antrum and has not been of too long duration, careful daily flushing through the ostium with an alkaline solution and a solution of peroxide or camphoxol, followed by a 10 per cent. solution of protargol or the new preparation, argyrol, often gives a rapid and permanent result. Should this fail, however, after a short but fair trial, more radical means must be resorted to without delay. This consists in drainage downwards through the socket of a first molar or second bicuspid tooth,

that has been removed for the purpose of allowing the passage of a fair-sized bone drill, or by making a free opening in the canine fossa. The latter operation should always be preferred if there be a suspicion of carious bone, foreign body, or serious granular condition of the mucous membrane.

It might be well here to remark that my practice has been, in performing the simpler operations, to use chloroform to the stage semi-anæsthesia, or general numbness, and to extract the tooth and pass the drill and tube while the patient is still conscious. It is absolutely painless and has the advantage of avoiding the danger of profound anæsthesis and the accompanying nausea.

As regards treatment the same is practically true of the ethmoidals, frontals, and sphenoidal cavities, systematic cleansing and thorough drainage being the watchwords. This is accomplished in the ethmoidals by breaking down the intercellular walls and thoroughly curetting the cavity thus formed, and packing with sterilized or antiseptic gauze, the narrow selvage edge variety being preferable, as it is less apt to leave stray threads, a matter of considerable importance in all cavities not freely open to inspection.

In disease of the frontal sinus it often becomes necessary to open the affected cell over the base of the nose or supercilliary ridge, thoroughly curetting and draining downwards by enlarging the infundibular passage, and inserting a specially devised flanged rubber tubing. The sphenoidal cavity is entered by carefully breaking down its anterior wall, after removing part or the whole of the middle turbinal, and by careful packing or systematic flushing by means of a long straight canula passed diagonally upward and backward across the site of the middle turbinal and between it and the septum.

With this rather generalized view of the means of diagnosis and treatment, presentation is made of a number of cases illustrative of the conditions above described.

Case 1. J. F., male, age 26 years, divinity student, personal and family history negative. Having suffered for two months with a steadily increasing nasal obstruction he came to me early in June last for relief. Examination showed an enormous polypus completely filling the left nostril, freely movable, with a pedicle disappearing in the middle meatus. This growth was readily snared with a cold wire loop, and the nose thoroughly cleansed of a rather copious mucous discharge, although no odor was detected. The possibility of antral suppuration as the cause of the tumor was, however, suggested to him. Upon his following visit the ostium was readily found and about an ounce of an alkaline wash was injected into the antrum. The effect

was instantaneous, for as the wash was forced in, fully a dram of thick crumbly caseous material was forced out of what must have been an additional opening, filling the nostril with a horribly fetid mass. Thorough daily irrigation for four weeks with a mild alkaline solution and camphoxol resulted in a complete cure.

Case 2. E. B., female, aged 32, housekeeper. Had been annoyed for several months by occasional discharges of a small amount of ill-smelling purulent matter from the left nostril, experienced usually upon leaning forward. This condition resulted in loss of appetite and much general depression, and, as she was under dental treatment at the time, was advised by her dentist to consult me in the matter. Examination showed a surprising freedom from catarrhal disease, and for several days no discharge was detected. Effort was made to flush the corresponding antrum through the ostium, but owing to the peculiar conformation of the parts it was not easily accessible. Irrigation of the sphenoidal and anterior ethmoidal cavities was negative in results. Transillumination showed clearly that the frontal sinus was not involved, and although the left antrum showed no illumination, the right transmitted light clearly. There were several crowned teeth (dead) on the left side, the second molar being especially tender, and it was thought that this might be the possible cause of the trouble, there being a complete absence of previous history of nasal trouble. Exploration of the antrum was then made with a curved trochar through the wall of the inferior meatus under a ten per cent. cocaine application, resulting in the removal of considerable dirty, fetid pus. The following day the crowned second molar was removed and the antrum was drilled, and thoroughly flushed and drained through its site. The tube was left in situ exactly two months, and although the discharge was almost nil from the first, daily flushing was kept up until the opening was allowed to close. There has been no return of the trouble.

Case 3. Widow, aged 50, had for many years suffered with a copious purulent dicharge from both nostrils, with more or less nasal stenosis. On several occasions polypi had been removed by different physicians, but no systematic treatment had been followed. About a year ago she applied to me for relief from nasal stenosis. A large number of polypi were removed from both middle meati, and she was told that unless treatment were followed up, they would inevitably return, their removal having exposed a bad suppurating ethmoiditis. She failed, however, to take this advice to heart, and disappeared until several months later, when she came to the office one day with a large phlegmonous swelling over the right eye involving the lid, and a copious purulent discharge from both nostrils. Examination of the nose revealed much necrosis in the region of the anterior ethmoidal cells, from which copious purulent discharge exuded. Upon a diagnosis of frontal and ethmoidal abscess patient was sent to hospital and preparations made to open the right frontal sinus over site of phlegmon. However, as there was some doubt as to the frontal involvement, and the patient strongly objected to a general anæsthetic, the phlegmon-

ous swelling was cut down upon after having been frozen with ice, and evacuated of considerable pus, and several loose flakes of bone from the supercilliary margin. Search was then made for some perforating necrotic area into the frontal sinus. The probe, however, was found to pass under the supra-orbital ridge along the roof of the orbital cavity and in the direction of the ethmoidal cells, showing that evidently a perforation into the orbit from that structure existed. The external wound was dressed and patient put to bed. Several days later the middle turbinal was removed under cocaine anæsthesia, and the whole of the ethmoidal region on the R. side thoroughly curetted through the nose, thrown into one cavity, and packed. An idea of the size of this cavity may readily be obtained by the fact that four feet of half-inch selvage gauze was required to completely fill the space. The purulent discharge from above the eye and from the right nostril rapidly diminished, and in a few days ceased entirely, although daily packing was kept up for about five weeks. Six months later patient reported that there had been no discharge from the right nostril since treatment, although the left side, for which treatment had been refused, still continued to discharge.

Case 4. Aged 50, had for three months been annoyed by a copious mucous discharge from the right nostril, with occasional periods of cessation, during which there was much suffering from frontal headache with some fancied swelling over R. eye, relief from which was accompanied by a copious muco-purulent discharge from this side, occasionally somewhat offensive in odor. The light test on both sides was negative. Examination of the nose showed considerable crowding of the anterior end of the middle turbinal on the affected side, which, upon being shrunk by cocaine, allowed free mucous discharge from the infundibular opening. Destruction of the anterior hypertrophy by galvano cautery brought about complete relief within two weeks.

Case 5. Two years ago a woman of 45, came to be treated for severe nasal catarrh, accompanied by burning sensations felt on the top of the scalp. Examination of the nose revealed but little of interest. There was small evidence of catarrhal disturbance and absolutely no obstruction. On close questioning, however, it was ascertained that occasionally when the head was held forward about an ounce of thick clear mucous would be discharged, accompanied by immediate relief from the burning sensation on the top of the head. After several visits, during which exploration of the various cavities was attempted through their natural openings, the sphenoidal cavity was emptied of a clear glairy-looking, tenacious mucous, that would easily have filled a hen's egg. It was proposed to establish a free opening by destroying the anterior wall, but patient declined operation.

Many more cases of similar character might be cited, but the few taken at random are amply sufficient to stimulate discussion of this subject. The several points to which attention is urgently called, are the imperative necessity for careful and thorough examination of cases in which catarrhal discharge is copious, in order to make a correct diagnosis, and the thorough and complete drainage of all involved areas, which is absolutely essential to a cure.

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EDITORIAL COMMENT.

In planting a new banner in the field of medical journalism, we are keenly alive to the fact that there may exist no active demand for more media for the dissemination of matters medical; nor do we deceive ourselves into thinking that a long felt want calls for relief.

Aside from a hope that the success to which with honest efforts we aspire, may be realized, there are other motives that have actuated the physicians of this State to issue a publication of their own. There are about 3,000 physicians in this State, and two medical colleges which annually graduate 30 or more men, the majority of whom take up their residence here.

We are blessed with laws regulating the practice of medicine,

but appreciate, too, that they are inadequate to properly protect the rights and safety of the physicians and the public. With 3,000 physicians in practice, and an annual increment of about 100 or more, we feel that there is a place here for an organ championing the cause of the physicians for the physicians, and for the public.

We will aim, in our editorial utterances, to avoid the shoals of factional strife, to court no "entangling alliances," but to encourage and recognize good work wherever it is being carried on.

With this brief statement we go to press, trusting to be graciously adopted into the large family into which we have thrust ourselves, and looking for, and hoping to receive the support and cooperation of the physicians of Wisconsin and neighboring States.

MEDICINE AND THE UNIVERSITIES.

In an address entitled "Medicine and the Universities" delivered at the meeting of the Western Alumni of Johns Hopkins University held at Chicago, Feb. 28, 1902, and published in *American Medicine*, July 26, 1902, Dr. L. F. Barker of the University of Chicago makes a plea for the endowment of medical departments of Universities. In depicting the transitional stages that have characterized medical instruction in this country, he makes the following division of schools:

1. Proprietary School. An institution owned by a corporation of physicians.

2. Pseudo-University. This is a proprietary school over whose medical faculty a university has undertaken to exercise a certain degree of responsibility, and in which some of the scientific branches are taught at the university proper. In some cases the prestige of this connection—more than any material improvement through this means—was the object sought.

3. The Semi-University School. Under this heading Dr. Barker would place 6 or 8 of the best medical schools in the United States, and by this term would characterize those in which the subjects of the first two years are taught in the university, by university professors who do not engage in the practice of medicine, but who give their whole time and energies to the teaching and investigation of the science they represent. The majority of those who teach in the departments of the last two years indulge in private practice also.

4. A Real University School. No such ideal school exists as yet, but Dr. Barker plans that in such an institution each department—including each practical clinical branch—be in charge of a leader who is both a teacher and an investigator, and devotes all his time and talent to that department. It is generally taken for granted that in the

philosophic faculty of a university, a professor gives the whole of his time to this university work, even though he possess ability that could earn him a large salary, did he but put his knowledge to commercial use. The first desideratum for the transformation of a semi-university school into a real university school, is an endowment large enough for the erection and maintenance of several university hospitals—one each for medicine, surgery, and obstetrics, and each thoroughly equipped with everything necessary for instruction in that branch, and for original research. Dr. Barker estimates that two million dollars as an endowment for each department would not be excessive. Professors in these departments should be chosen for their scholarly attainments, for the success that has marked their career elsewhere in these branches of medicine, and they should be likely to remain actual contributors to knowledge for twenty years. They are to be paid large salaries, but not to engage in practice, save that the well-to-do public should—at least in some rare and difficult cases—be permitted to profit by the advice of the university professor—the fees for such services to be contributed to the hospital budgets.

This plan of Dr. Barker's for the organization of a real university school on the basis suggested, ideal though it be, and arrived at in a thoroughly logical line of reasoning—is nevertheless such a radical departure from existing conditions that its consummation might truly be considered a Utopian era in medical educational methods. Dr. Barker's deductions that the clinical branches must naturally fall into the same category as do the other scientific branches, are certainly logical conclusions, and yet we are inclined to doubt their feasibility. Human nature is an uncertain quantity and cannot be counted upon as serving a proper basis for an argument—be it ever so logically conceived. There may in time arise a class of men, trained investigators and teachers, who, after attaining eminence in their work, will rise above the temptations that beset the successful and much sought-after clinician, and remain at their posts—faithful to that science with which they have cast their lot. It is, however, necessary—in order to obtain the results hoped for—that the clinical branches be assumed by men who devote their whole attention to investigation and teaching. Is there no other satisfactory solution—one that will give birth to investigators and teachers not lost to the student world, nor yet to the world of progressive medicine?

Let us see where the following scheme will lead us: the young graduate enters the university hospital as an externe, and in this capacity renders the service usually required of one in this position.

While here—if he evinces an interest in teaching and scientific research—he is given every opportunity to develop along these paths. After a certain period of probation he advances to an interneship which in time yields to the position of—say—third assistant. If deserving of promotion he passes successively on to the second assistantship, and finally becomes first assistant—never for one moment having lost sight of the patient, the student, the laboratory, the mortuary, and the assistants who are carrying on investigations under his direction. Dignified with the title first assistant to the professor he is at once elevated to the position of a consultant. This position he holds until called to accept a chair at this or some other university. By this means we have reared a professor who is thoroughly conversant with all methods of investigation, one who has never ceased making scientific inquiries since the day of his graduation, one who still follows up his work and supervises that of others, and one who, from the day of graduation, has been an active producer. This system obtains to a large degree in some of the European cities, and no one can question the productiveness of most of the docents and professors of clinical branches.

Would not this plan—provided suitable hospital endowments were obtainable—cover Dr. Barker's requirements without robbing the professor of control over his own actions? Is there not less likelihood of defections in the ranks through the alluring temptations born of the prestige the Professor's position has gained for him? In the long run is it not likely that the incumbent of a clinical professorship will—during the many years of probation and preparation for his life work—evince a greater unselfish devotion to his labors, if in addition to the burden—though pleasureable it be—of his scientific labors—he be permitted to look forward to the rewards which a high class consultation clientèle offers him?

We cannot but feel that there is much truth in Dr. Barker's plain statement that the "period of usefulness of the proprietary school of medicine has gone," and that the "Pseudo-University" school is not to be more favorably looked upon. However, actual amalgamation with and absorption into a progressive university—by this means becoming an integral part of such a university, governed by its laws, identified with its liberal spirit, elevated by its lofty ideals and high associations, and above all strengthened by its independence—this must be the present day tendency and goal of all proprietary medical schools, whatever their present efficiency.

MILWAUKEE ISOLATION HOSPITAL.

Dr. F. M. Schulz, Health Commissioner, is making a strong effort to improve conditions at the Isolation Hospital, and has asked the Council to make an appropriation for the thorough renovation of the old building and the erection of several cottages, the idea being to use the old building for smallpox only. The measure has met with much opposition from the people in the immediate vicinity of the hospital and the aldermen from that section of the city, and a strong fight against the measure will doubtless be made in the Council. This is a matter of the greatest importance. There is a pressing necessity of improvement at the Isolation Hospital. There is not the slightest sanitary reason why the hospital should not remain where it is, but there is every reason why it should be remodeled and enlarged to meet the demands of modern scientific care of contagious diseases. The Health Commissioner deserves the support of the people and the profession in this important matter. Political expediency and the political interests of a few men should be ignored, and the improvements at the hospital so long needed and so long delayed, should be completed at the earliest possible moment.

MEDICAL COLLEGE CONTROVERSY.

The State Board of Medical Examiners assembled in Milwaukee, November 25, to investigate the charges of violation of the State Medical Law, made by the Milwaukee Medical College against the College of Physicians and Surgeons. After some preliminary skirmishing, in which nothing of importance was developed, except the fact that there was no sufficient *casus belli,* the charges were withdrawn. The State Board decided hereafter to require medical colleges to adhere strictly to the rules of The American Medical College Association, and are in favor of admitting university graduates, who have pursued a scientific course, to advanced standing in medical colleges.

The Board also announced that they would request the State Superintendent of Public Instruction to appoint a representative of his office to conduct the examination for admissions to medical colleges in this State. This action of the Board merits the commendation of the profession, and it is hoped that it will remove the source of trouble between the colleges, prevent the future bandying back and forth of charges of irregularities, favor the disarmament of the warring elements, and a return to the paths of peace so necessary to permament success, and so earnestly desired by all.

A CHRISTIAN SCIENCE CRIME.

Recently there died in this city a man who was closely identified with the Christian Science movement. If a man is "as old as his arteries" then this man had surely lived his allotted time, for all his arteries—large and small—were simply calcified tubes. This nutritional interference doubtless had much to do with the development of a bed sore, and yet such an extensive, sloughing, unclean condition from this cause has never before come to our notice. Little or no attempt was made to cleanse the slough—or protect or dress it in any way. We are told by the Scientist attendant that the man had all possible attention—that his back was frequently rubbed, etc. A physician or trained nurse would have suggested a water or air bed, and with careful attention this pitiable condition could doubtless have been avoided. What food for scandal and charges of criminal negligence, had this occurred in a hospital! But this crime was committed with the consent of the patient, who—*mirabile dictu*—acknowledged himself ill! "The offence is rank—it stinks to heaven."

THE SERUM TREATMENT OF SCARLET FEVER.

Much comment has been aroused during the past few months by reports of the serum treatment of Scarlet Fever. The lay journals contain frequent announcements of reported discoveries and prospective claimants of the Rockefeller prize. Of perhaps the greatest interest—greatest because the reports that have come to us are scientifically recorded experiments—are the cases observed by Moser of Vienna and Baginsky of Berlin, and reported at the recent Congress of German Physicians and Naturalists, held in Carlsbad, and the report of Geo. A. Charlton of Montreal. Baginsky's results —though encouraging—have not been very satisfactory. He reports upon the treatment of 700 cases of Scarlet Fever with an antistreptococcus serum. Streptococci—either alone or in combination with staphylococci or diplococci—were uniformly present in the pharynx of all cases. Moser's report is of a much more reassuring character. He was able to isolate a streptococcus from the blood of 63 out of 99 fatal cases, and made his serum from the bouillon cultures of the germs thus gained. All told, 84 cases were subjected to the injection treatment, the prognostically less favorable cases being selected. The mortality in a series of 400 cases (including 81 treated with the serum) was 8.9 per cent., as compared with an average mortality of 13.09 per cent. in other Vienna hospitals. The earlier the cases were treated the lower the mortality record reported, but of even greater significance is the fact that the general symptoms improved early,

the nervous disturbances disappeared, and temperature and pulse were quickly reduced.

Geo. A. Charlton of Montreal makes a preliminary report of 15 cases treated with an antistreptococcus serum prepared by F. Stearns & Co. The cases treated were severe types of the disease. Thirteen of these cases recovered promptly and almost without complications. In none did albuminuria develop. Of the two deaths, one was a patient moribund upon admission, the other had pneumonia and succumbed to an attack of laryngeal diphtheria.

Experiments such as these will stimulate investigation, and we confidently expect soon to see reports of a wholly satisfactory nature.

CLINICAL REPORTS.

ACUTE POSTERIOR URETHRITIS.

Clinic Held by Prof. Finger of Vienna.

(Special Correspondence.)

It is important both on account of the prognosis and the treatment to recognize the presence of acute posterior urethritis when complicating anterior urethritis in the course of gonorrhoea. The prognosis is always indefinite when the posterior urethra has been involved, and treatment by injections is sufficient because these cannot pass beyond the "sphincter externus vesicæ" (compressor urethræ).

In the first place, a few facts concerning the physiology and anatomy of the urethra are of importance. The prostatic and membranous portions are separated from the anterior urethra by the anterior layer of the triangular ligament, and by the compressor urethræ, which is composed of voluntary muscle fibres. Posteriorly they are separated from the bladder by the sphincter vesicæ (internus), a weak circular layer of involuntary muscles at the neck of the bladder. Under ordinary circumstances, it has been shown by Finger and others, the posterior urethra can hold from 30-40 drops of fluid. If, however, more pus is secreted than the posterior urethra can hold, it will seek the path of least resistance and naturally regurgitate into the bladder. From this fact, two points of importance may be ascertained: 1. That in the presence of a posterior urethritis, chronic or acute, without an anterior urethritis, pus does not appear at the meatus urethræ; and 2, that pus in the bladder does not necessarily signify cystitis.

In the diagnosis of conditions within the urethra, Finger uses the two glass method very extensively. The urine is collected in two portions, and it is of particular value to have the first portion large, so that it may thoroughly wash the urethra. With this test, the first glass contains the contents of the urethra plus some of the contents of the bladder. The second glass contains simply contents of the bladder. Turbidity in this portion may result from pus (a) from the kidney or its pelvis, (b) from the bladder, and (c) from the posterior urethra. If both parts are cloudy, it is possible to determine whether pus is present in the posterior urethra by the following procedure: A good-sized catheter with a large opening at its end is passed to the bulbus—this is easily recognized by the resistance which it offers. A cold saturated aqueous solution of boric acid is then injected through it with some force. The cold solution and the force are employed to produce a spastic condition of the compressor urethræ, which effectually prevents the passage of fluid into the posterior urethra. In this way the anterior urethra is washed out with three or four hundred c.cm. of the fluid. After the completion of this step, the urine is collected in two portions. If the first part is the more turbid, the turbidity is due to pus in the posterior urethra. If the second part is equally cloudy, the pus emanates from the bladder or kidney.

In order to obtain the best results from the two glass test, it is necessary to perform it with the early morning urine as well as later, because the early urine contains all the pus accumulated during the night, while later on the urethra has been washed out by the more or less frequent passage of urine. It is therefore the best criterion of the intensity of the process. On the other hand, if the second portion of the first urine is turbid, while the second portion of the later urine is clear, cystitis is readily excluded. Inasmuch as the onset of posterior urethritis in the presence of anterior urethritis is at times most insidious, it is dangerous to depend solely on symptomatology in the diagnosis of the process.

Two symptoms in addition to turbidity of the bladder urine occur frequently in acute posterior urethritis, which are usually considered pathognomonic of disease of the bladder. These are frequent micturition, even strangury, and blood in the last urine. It is generally believed that the desire to urinate depends upon the pressure of the urine upon the bladder wall or upon any other cause of its irritation. It is self-evident that this will not explain all cases, inasmuch as under many circumstances there is intense strangury when the bladder is empty or contains only a few drops of urine. But when the bladder

is so full that the pressure within it overcomes the sphincter vesicæ internus and the posterior urethra becomes filled with urine, there is desire to micturate. Finger points out that a stone may remain in the bladder for years without causing any symptoms, but that if for any reason it passes into the posterior urethra, strangury is intense and unrelieved until the stone is removed or pushed back into the bladder. Again, in one instance he met with a case of carcinoma of the bladder in which there had been blood in the urine for a year; for 2 months only strangury had been present. On operation it was found that a small tongue of tumor tissue had grown into the prostatic urethra.

For these and other reasons Finger believes that frequent and intense desire to urinate does not point to disease of the bladder, but is pathognomonic of involvement of the prostate. In anterior urethritis, of course, the opposite symptom prevails—the patient avoids urination so long as possible, sometimes for 12 or 15 hours, to escape the ardor urinæ. L. M. L.

ECTOPIC GESTATION.

Reported at Meeting of the Milwaukee Medical Society, October 14, By Dr. G. F. Shimonek.

Mrs. M., married; multipara: age 33. Aside from poor general health, pelvic pain, and leucorrhœa, there is nothing in previous history bearing upon case. About the middle of May, 1901, she was suddenly taken with excruciating pain thought to be due to oncoming menstruation, in the region of the right ovary. Morphine and chloroform had to be administered. The severe pain ceased, but some pelvic pain persisted, so that it was almost impossible for her to be out of bed. Pieces of membrane were expelled from the uterus. In June her menses did not appear and pain in varying severity was constant. In July her menses reappeared, accompanied by severe pain; no temperature; pulse rapid and weak; poor appetite; constipated. Again very severe pain during August menstrual period.

I saw her in consultation September 1, 1901. Examination: Uterus large, retroflexed, and firmly adherent, cervix lacerated bilaterally. A mass was felt to right of uterus, very tender to touch so that satisfactory palpation was impossible. Metrorrhagia existed.

Diagnosis: Pyosalpinx, though I was not satisfied that that diagnosis could be made without reserve. Laparotomy revealed ruptured ectopic gestation of right side, with cystic ovary. Tube was ruptured and contained a clot of firm consistency, that was firmly attached to it. Firm adhesions existed between tube and uterus, which latter

was retroflexed and adherent. Fœtus was not found. Tube and ovary were removed; adhesions separated; and uterus replaced. Patient recovered.

I believe that the patient's life was saved by the firm agglutination of the tube with the uterus. One year and a week after the right-sided gestation was operated upon, she again submitted to laparotomy for ectopic gestation of the left tube. The tube was impregnated near its outer third. The fimbriated extremity was patulous, a clot protruded, and there was hemorrhage from a rupture in the middle of the upper surface of the tube. Considerable fluid blood welled out as the peritoneum was incised. The ovary was cystic and the uterus was in normal position and movable. It was estimated that this pregnancy was of about five weeks' duration. The first severe attack of pain occurred three days before operation and two other attacks followed. There was also hemorrhage from the uterus. Morphine had been given hypodermically in large quantities. The correct diagnosis was made early, and if instead of temporizing, the operation had been promptly performed, time and suffering could have been saved. I presume the attendant hoped that his judgment was in error. The abdomen was not opened through the scar but to the left of it, through the left rectus muscle because it seemed less likely that post-operative hernia would develop. The embryo was not found. Patient recovered.

Case III. Mrs. P.; aged 30; unipara; said to have had ectopic gestation in the right tube about four years ago. The treatment employed consisted in electrical applications and morphine injections into the sac. Patient made an uninterrupted recovery, and the mass which it was said was plainly outlined, gradually disappeared, and the tube and ovary returned to normal. Judging from the history which the patient gave (I did not see her at the time) of undoubted symptoms of pregnancy, followed by pain, and a mass which could be unmistakably felt by the physician in charge, I presume that this diagnosis was correct. I saw patient in consultation; she was suffering from a train of symptoms similar to those experienced during her previous illness four years since—that is, suppression of menses, nausea, and vomiting, followed suddenly by excruciating pain in left side of pelvis. A mass of about the size of a teacup could very easily be made out. It had existed about ten weeks and was very tender. The first attack of pain occurred during the first month, but the tumor enlarged steadily until at the time of operation it had attained the size of a large cocoanut. A diagnosis of ectopic gestation seemed perfectly justifiable. The patient's general condition was very poor;

her pulse was rapid and weak, temperature above normal and stomach irritable, so that the outcome seemed anything but promising. Having had such a good result during the first attack the attendant felt justified in pursuing the same course of treatment this time, but—unfortunately—it proved a disastrous failure. When this became clearly evident, surgical intervention was called upon as a dernier resort with but poor chance of success. I have but one explanation of the great rapidity and virulence of sepsis that followed the operation, and that is, that septic matter had entered the sac with the morphine injections; hence the constitutional disturbance commencing soon after the inception of the treatment. The tube had ruptured into the broad ligament and hemorrhage continued, therefore the gradual enlargement of the tumor. The supposition was that this progressive enlargement was due to the fetal growth of the fœtus, but none was found. The intestines were intimately attached to the mass. A large quantity of clotted blood with ruptured tube and ovary were removed. During this manipulation hemorrhage became very active but was easily controlled by the ligation of the ovarian artery. My first thought was to evacuate the blood per vaginam, and had I done so, I think the hemorrhage would have been uncontrollable without opening the peritoneal cavity. Almost immediately after operation violent sepsis developed, and the patient died 36 hours later.

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The selection of operation is a vital problem, and whichever plan is carried out one may wish to have chosen differently. I think that if ever I am confronted with another case of similar nature I shall evacuate the contents of the sac per vaginam, and, should hemorrhage be severe, lose no time in opening the abdomen and securing the bleeding arteries, materially lessening in this way the chances of infecting the peritoneal cavity. Packing the cavity of the sac with gauze in the face of brisk arterial hemorrhage, would not only prove ineffectual, but the firmness with which packing would have to be done would endanger the adhesions protecting the peritoneal cavity. It is an incontrovertible fact that blood coming from a good sized artery cannot be controlled by packing unless such an artery can be compressed against a bone, or some other hard body. In view of the information gained by laparotomy in the first case, it seems that the diagnosis should have been made, or suspected in this latter instance, but one is often turned from a logical line of reasoning, and consequently misled in the proper interpretation of much more common and simple cases than are those of ectopic gestation. We meet with many different conditions in the female pelvis which must be considered in framing an opinion, and those with which we are most familiar often

overshadow rarer conditions which may, and do, escape our minds altogether. And yet, such an extremely dangerous disease as ectopic gestation ought to be held very prominently before our eyes at all times, and it certainly is much safer to make a diagnosis of ectopic gestation on a weak foundation, and operate forthwith, than to delay because of insufficient evidence.

A CASE OF DESCENSUS UTERI IN A NULLIPARA.

By Dr. John Madden of Milwaukee.

Dr. H. D. Beyea, in *American Medicine*, a few months ago, briefly reported two cases of descensus uteri in nulliparous women. In adding this case to those already reported I simply wish to point out what must be a frequent cause of this displacement—but one not touched upon in speaking of the causes in the reports above mentioned.

Case—A young, well-nourished healthy woman, married ten years or more but never pregnant. Examination disclosed the uterine cervix presenting at the vulva. The cause of the patient's sterility became at once apparent when the exceedingly elongated cervix uteri was made out. The body of the uterus was small, even for a nullipara, and not longer than the abnormally elongated cervix. The uterine supports were somewhat relaxed and the upper third or fourth of the vagina invaginated.

Two causes were evidently responsible for the displacement. First—the sexual act. By reason of the elongated cervix, filling the upper part of the vagina, the organ was very short, so that there was, with each coition, a forcible pushing upward of the uterus and consequent stretching of the vaginal walls.

The second and more important cause of the displacement was the inability of the cervix by reason of its length to rest in the posterior cul-de-sac of the vaginal vault. Lacking this normal support the uterus became retroverted so that its axis became the same as the axis of the vagina. In this position every step and every muscular effort involving the abdominal walls had a tendency to press the uterus outward and downward.

Amputation of a portion of the cervix with artificial support of the uterus for a while would, very likely, relieve both the displacement and the sterility.

SOCIETY PROCEEDINGS.

MILWAUKEE MEDICAL SOCIETY, NOVEMBER 11, 1902.

Vice-President Dr. Carl Zimmerman in the Chair.

Dr. I. D. Mishoff read a paper on "Diet as a Therapeutic Measure." The reader emphasized many valuable rules for diet upon which, ordinarily, the physician does not lay sufficient stress in his advice to patients. The rules might well be followed by the healthy as by the sick.

Dr. L. Boorse talked on "The Need of a Milk Commission." He said it was impossible at the present time to get a chemically and physiologically pure milk in the Milwaukee market. The methods of obtaining and handling the milk are such as to offer great danger of its infection and contamination; by this statement adulteration and methods of preservation by chemicals are not meant, as our milk supply is practically free from these abuses. After giving a short history of the work done by milk commissions in other states of our country and in England, Dr. Boorse announced that one of our wealthy business men intended to start a model dairy, run on a strictly scientific and hygienic basis; that the man was interested in the idea of furnishing a certified milk to the community, and was ready to invest $150,000 in so doing; that he had agreed to the supervision of his plant by a commission appointed by a medical organization of good standing, and was ready to pay for the services of a chemist, a bacteriologist, and a veterinary surgeon, to be selected by such Commission.

With this in view, Dr. Boorse moved that a Milk Commission consisting of nine men, be appointed by the Society, through its President, and that such a Commission be empowered to enter into such contracts with this dairyman and others, as would result in putting upon the market a milk that could be certified to by the Commission as a pure milk. After discussion by the Society the motion was unanimously carried.

Dr. F. C. Studley showed specimens of enormous phosphatic stones removed from the urinary bladder of a 65-year-old patient.

Dr. D. J. Hayes demonstrated parts of an enlarged prostate removed by perineal operation.

CHICAGO MEDICAL SOCIETY.

November 19, 1902. The President, Dr. Wm. A. Evans in the Chair.

CASE OF VENTRO-FIXATION, PREGNANCY, INVERSION OF THE UTERUS DEATH, AND POST-MORTEM.

Drs. Wm. E. Holland and Byron Robinson presented jointly a case of ventro-fixation followed in two years by pregnancy, which proceeded to full term. There was a short normal labor and delivery. Death occurred three and a half hours post-partum. A post-mortem examination revealed complete inversion of the uterus. The uterine circulation was injected *in situ* with red lead, the uterus removed, and an X-ray of the specimen secured. The authors presented observations and deductions concerning the relation of the ventro-fixation to inversion of the uterus.

Dr. Charles E. Paddock propounded the question, Why is it we find so many cases of inversion of the uterus now, when there were so few formerly? He believes it is due largely to a misunderstanding of the Crèdè method of the treatment of the third stage of labor.

Dr. Rudolph W. Holmes said that some years ago he presented a paper on the "Etiology of Inversion of the Uterus." He collected at that time 830 cases, 75 per cent of them being due to spontaneous causes, while 25 per cent. were due to the Crèdè method, and to traction on the cord. He thinks abdominal pressure is the direct cause of the inversion in the larger proportion of cases.

Dr. A. McDermid said it was he who performed the operation of ventro-fixation upon this patient some three years and a half ago. In listening to the report, he thought it was believed atrophy had occurred, owing to the method of fixation adopted, and that the atrophic band had inverted the uterus. When the uterus is fixed by any method to the abdominal wall, the anterior wall of the uterus during gestation, not being allowed to expand, becomes thick and dense, while the posterior wall becomes attenuated, and he thinks it is rare that the posterior aspect of the fundus is so attenuated that it is liable to cause inversion. The speaker had used the modified method of fixation of Martin, of this city.

Dr. C. S. Bacon said it is hardly fair to attribute the inversion to the ventro-fixation, and gave his reasons for so thinking.

Dr. Franklin H. Martin described a method of ventro-fixation which he had used in 173 cases. Of this number, only 30 were women who could bear children, and of these 30, 2 had children within one year to two years after the fixation had been made. These women went on to term, were confined in a normal manner, and made no

complaint. In each of these cases he had examined the uterus afterwards, and found it suspended.

Dr. C. W. Barrett thinks that ventro-suspension or fixation should be reserved for those cases in whom pregnancy may not occur afterwards. He believes the weight of clinical evidence is tending that way.

THE GRAVITY OF BRONCHITIS IN ELDERLY MEN AND THE SAFETY VALVE ACTION OF RELATIVE TRICUSPID INSUFFICIENCY.

Dr. Robert H. Babcock read a paper on this subject, in which he reported a case. The case illustrates the gravity of bronchitis in elderly men, and teaches some instructive lessons from which he thinks the following conclusions may be drawn:

1. Bronchitis in elderly, although robust, men may readily become chronic. Presuming on their previously good health and vigor, they think they can easily throw off their cold, and hence are apt to ignore medical aid until after the bronchitis has become settled and obstinate.

2. The cardio-vascular degenerations so often present and unrecognized in elderly men increase the tendency of bronchitis to become chronic. This is because the stiffened arteries and chronic myocarditis, even though the heart remains potentially equal to the demands of everyday life, tends to the production of pulmonary and bronchial congestion, which, when bronchitis once sets in, renders it less amenable to ordinary treatment. Moreover, the physician who may, perchance, be consulted is apt to overlook the influences of cardio-vascular changes, and contents himself with prescribing expectorants, whereas he should at the same time lessen the congestion by a brisk calomel cathartic. He should also in many cases inhibit exercise and attention to business, that the heart may be relieved of unnecessary strain.

3. Another element of danger in the bronchitis of elderly men is pneumonia. In most cases the bronchitis predisposes to a pneumonia, which may develop after the lapse of weeks or months, as in the case narrated. There is, however, the possibility that the bronchitis, which sets in abruptly and severely, may be but an attendant or manifestation of pneumococcus infection, and may obscure the signs of pneumonia when this is lobular.

4. A fourth danger lies in the effect of the bronchitis upon the heart. Chronic myocarditis develops so insidiously that one may not always be able to detect it, and cannot foresee how little extra strain may be required to seriously impair its potential strength.

Even should pneumonia not ensue, the mechanical strain of the bronchitis, especially if it leads to atelectasis and emphysema, and of repeated violent attacks of coughing, is capable of seriously damaging the degenerated right ventricle, the dilatation of which aggravates the already existing congestion.

5. Should such dilatation lead to relative tricuspid insufficiency, this is not to be regarded as a sign of danger *per se,* since it is in reality a safety valve which for a time protects the ventricle from disastrous over-distention. The tricuspid regurgitation is a criterion of the degree of mechanical strain to which the ventricle is subjected.

6. Such safety valve action not only furnishes a brief respite to the patient from the death threatening him, but affords to the physician a little longer interval in which to battle for victory, while it, at the same time, indicates the necessity of relieving dangerous congestion by cathartics, possibly also venesection, and cardiac tonics.

CIRCULAR INSANITY.

Dr. Richard Dewey reported a case of circular insanity which he had studied clinically, differentially, and medico-legally. In this case there were five successive cycles of manic-depressive psychosis, which occurred with considerable regularity. The later phases were more regular, and mental deterioration was gradual. He spoke of a remarkable succession of legal contests which were conducted by the patient himself, the patient subsequently dying of typhoid fever.

Dr. Thor. Rothstein presented a report covering the examination of the brain, both gross and microscopic. He also exhibited drawings and photographs. Examination of the brain showed structurally a normal state. The findings were not characteristic of any organic or degenerative change in the brain.

Dr. Daniel R. Brower said he was more or less familiar with this case from the first clear evidence of the patient's insanity in 1889 up to within a few months prior to his death from typhoid fever. He agreed with the essayists that the case was one of circular insanity.

Dr. Harold N. Moyer said the case was unique. He believes that this individual and his mental defects constitute one of the most interesting clinical observations in insanity that has ever occurred in this region, if not in the country. He concurred in the diagnosis.

Dr. Sanger Brown regarded it as an exceptionally clear case of circular insanity. He called attention to one point, namely, that in text-books it is said that these patients lose flesh during the exciting interval, but this case contradicted such a statement, in that the patient would gain from one hundred to one hundred and twenty-five pounds during the period of excitement.

It was likewise stated in text-books that these patients do not have delusions. There were marked delusions in this case.

Dr. L. F. Barker confirmed the report of Dr. Rothstein in every way. As to the actual pathogenesis of such a psychosis, no one knew. He thinks we shall have to await chemical studies before any light is thrown upon the pathology of this psychosis.

ANKYLOSTOMA DUODENALE.

Dr. Joseph A. Capps reported a case of ankylostoma duodenale. He gave the life history of the parasite, described the modes of infection, and demonstrated specimens illustrating different phases of development, and then discussed the diagnosis and treatment.

THE CENTRAL WISCONSIN MEDICAL SOCIETY.

Janesville, October 28, 1903.

The Central Wisconsin Medical Society met in its second quarterly session at the new City Hall in Janesville, and was called to order by the president at 10:30 a. m. The secretary's report of the last meeting was read and adopted. There were present: Drs. Cutler, of Verona; Moyer and Gnagi, of Monroe; Lacey of Footville; Prince, of Palmyra; J. M. Evans, Jr., of Evansville; Manley, of Shopiere; Pickering, of Muscoda; Nuzum, of Brodhead; N. S. Davis, Jr., of Chicago; G. V. I. Brown and Thienhaus, of Milwaukee; Miller, of Rockford, Ill.; Gifford, of Juda; Emmons, of Oregon; Sharp, J. A. Jackson, and C. S. Sheldon, of Madison; Bennett, Connell, Carr, E. C. Helm, and McCabe, of Beloit, and Pember, Farnsworth, Mills, G. H. Fox, Woods, Buckmaster, Whiting, Cunningham, Judd, Loomis, Palmer, Barry, and Merritt, of Janesville.

The first paper was read by Dr. J. M. Evans, Jr., of Evansville, entitled "A Remark on Heart Trouble." The paper was discussed by Drs. E. C. Helm, Sheldon, Emmons, Whiting, Sutherland, and the author. Dr. Pember reported an obscure case of enlargement of the liver and spleen. It was clinically examined by Dr. N. S. Davis, Jr., of Chicago, who reported his diagnosis to the Society. Dr. N. S. Davis, Jr., of Chicago, then read a paper on "The Treatment of Typhoid Fever." It was discussed by Drs. Pember, Sheldon, Loomis, Nuzum, E. C. Helm, Jackson, and the author. Dr. T. N. Miller of Rockford, Ill., read a paper on "Acute Tonsilitis." It was discussed by Drs. Loomis, Sheldon, McCabe, Jackson, and the author. Dr. W. F. McCabe of Beloit read a paper on "Suppurative Phlebitis." It was discussed by Drs. Jackson, Cutler, F. C. Helm, and the author. Dr.

T. W. Kuzum of Brodhead read a paper on "Spinal Concussion." It was discussed by Drs. Prince, Jackson, and the author.

On motion the Society adjourned at 1:30 p. m. for the usual banquet, which was held at the Grand Hotel. Thirty-two sat down to dinner, which was especially good and well served. The social spirit was much in evidence, and it was an occasion enjoyed greatly by all present. Dr. Whiting, whom all delighted to honor as the toastmaster of the occasion, gave some very interesting reminiscences of Dr. N. S. Davis, Sr., whom he met many years ago at a meeting of the American Medical Association at New Haven, Conn. He then called upon the guest of the society, Dr. N. S. Davis, Jr., who was received with great enthusiasm, and whose response was greatly enjoyed. After the banquet the society was called to order at 3:30.

Dr. G. V. I. Brown of Milwaukee read a most interesting paper on "The Co-Relation of Mouth and Nose." The paper was discussed by Dr. Jackson and the author. Dr. A. B. Manley of Shopiere read a paper on "Acute Inflammation of the Liver," and reported a case. The paper was discussed by Drs. Mills, Connell, Jackson, Thienhaus, and the author. The last paper of the afternoon was read by Dr. S. B. Buckmaster of Janesville, on "Puerperal Eclampsia." The paper was discussed by Drs. Sheldon, Connell, McCabe, Emmons, Bennett, and the author.

The meeting adjourned at 6 p. m. to meet at Madison, January 28, 1903.

INTER-COUNTY MEDICAL SOCIETY.

Annual meeting was held at Eau Claire, Wis., Nov. 18, 1902. Following is the programme:

President's address—Puerperal Eclampsia, Dr. O. M. Satter, Rice Lake.

Myasthenia Gravis, Dr. C. Eugene Riggs, St. Paul.

Treatment of Tuberculosis in the Incipient Stage, Dr. W. B. Hopkins, Cumberland.

Treatment of Hemiplegia, Dr. Arthur Sweeney, St. Paul.

Torturing Young Mothers, Dr. F. W. Epley, New Richmond.

Placenta Prævia Centralis Twice in the Same Person, Dr. A. E. Hedback, Barron.

The following officers were elected:

President—Dr. E. L. Fletcher, Eau Claire.

First Vice President—Dr. Wm. B. Hopkins, Cumberland.

Second Vice President—Dr. F. W. Epley, New Richmond.

Secretary and Treasurer—Dr. Caroline Hedger, Eau Claire.

A committee on tuberculosis was appointed, composed of Drs. Boothby of Hammond, Hayes and Lyman of Eau Claire, Hopkins of Cumberland, and Epley of New Richmond.

A unanimous vote of thanks was tendered Drs. Riggs and Sweeney of St. Paul for their presence at this meeting.

The March, 1903, meeting will be held at Hudson, Wis.

FOX RIVER VALLEY MEDICAL SOCIETY.

The regular quarterly meeting was held at Oshkosh on Tuesday, Oct. 21, 1902, in St. Mary's Hospital.

At the morning session an interesting clinic was given by Dr. C. W. Oviatt, several operations being performed. Among others were the removal of a large ovarian cyst, an appendectomy, and the removal of a stone of very unusual size from the kidney.

The afternoon session was held in the parlors of the hospital, President C. D. Boyd in the chair. The following papers were read:

1. A History of Thermometry by Dr. F. W. A. Brown of Oshkosh. Dr. Brown traced the history of observations on temperature from the earliest times down to the invention and perfection of the clinical thermometer. He also made especial reference to infantile temperature, and its variations in health and disease.

2. Endometritis, by Dr. M. E. Corbett of Oshkosh.

This paper was very kindly contributed by Dr. Corbett on short notice to take the place of a paper on extra-uterine pregnancy by Dr. Thienhaus, who was unavoidably detained. Dr. Corbett condemned the routine use of the curette for the removal of septic material retained in the uterus, and in this view he was sustained by those taking part in the discussion.

CORRESPONDENCE.

CHICAGO LETTER.

DR. LORENZ IN CHICAGO.

For two weeks the medical interest and attention were chiefly devoted to Prof. Adolph Lorenz of Vienna and his assistant, Dr. Friedrich Mueller. Coming to Chicago on Oct. 13th to operate on the child of Mr. Ogden Armour, for congenital dislocation of the hip, Dr. Lorenz busied himself the next two weeks with a series of public clinics in various parts of the city. Few, indeed, were the doctors who failed to avail themselves of the opportunity to see this master work.

He confined his cases mostly to congenital dislocation of the hip

joint, which, as Paci first demonstrated, can be reduced by a bloodless method—manipulation and massage. The femur is brought into extreme abduction. To accomplish this the abductor muscles must be forcibly torn through at their tendinous portions near the pelvis. This, Dr. Lorenz emphasizes, is of utmost importance to obtain a good result. By rotary manipulations the head of the femur finally slips into the acetabulum.

A heavy body cast is then applied to hold the femur at right angles to the body in the lateral plane. The cast terminates at the knee, allowing motion of the leg. It is worn at least six months. In a few days the child is out of bed, and with a high shoe, can get about as well as any other child. Moreover, the force of the foot against the ground is well transmitted upward, and the constant impact serves to deepen the acetabulum.

After six months, the cast is removed, and the joint examined. If the parts are stable, the leg is permitted to come down slowly, and this is assisted by proper gymnastics. If, however, the capsule is found to be lax, the leg is brought down half way, and a new cast applied for several months more.

At the Cook County Hospital on Oct. 17, Dr. Lorenz demonstrated his own apparatus, devised for correcting deformities due to contractures. It consists of two plates, covered with rubber, which can be screwed together firmly to hold one part, while the other is manipulated to forcibly break up the contracture. This method greatly lessens the danger of fracture.

SANITORIA FOR THE TREATMENT OF PHTHISIS.

Again, and more actively than ever, Chicago is considering the establishment of suitable sanitoria for the treatment of tuberculosis, in recent and advanced cases. Already one hospital devoted exclusively to such cases is in course of construction, and others must soon follow. There are no accommodations at any of the present hospitals for pulmonary tubercular cases.

TYPHOID FEVER IN CHICAGO.

In a paper read before the Chicago Medical Society, Dr. Reynolds stated that during the three months—July 1st to Sept. 30th—402 deaths were reported as due to typhoid fever. The chief etiologic factor was a polluted water supply. The drainage channel accomplishes very little as yet. Most of the intercepting sewers are not completed, and there has been no change in the sewage disposal, other than that caused by the current in the main river and the south branch.

RUSH MEDICAL COLLEGE.

Rush Medical College at last admits women to all classes, and 16 are registered at the medical school proper, where the junior and senior years' work is carried on. The first two years' classes are conducted entirely at the University of Chicago. W. M. P.

BALTIMORE LETTER.

On Oct. 7th, the medical department of the Johns Hopkins University opened its tenth session with a larger attendance than ever before in its history. The entering class numbered ninety-seven members. With the present facilities for teaching, classes of that size cannot be accommodated, especially in the third and fourth year work, and the question now is, how to solve the problem. It is probable that some means will be adopted to limit the number of students in preference to making any change in the laboratory facilities or teaching force.

On Monday, Oct. 13th, the first meeting for the year of the Historical Club was held in the assembly room of the Hospital. The chief speaker of the evening was Dr. Osler. His subject was Beaumont, one of the first Americans to make any considerable contribution to our fund of knowledge concerning the physiology of digestion.

The Medical Society of the Johns Hopkins Hospital has held two meetings since the opening of the session. On Oct. 28th, several papers of particular interest were read. Max Brödel, the Hospital artist, presented the results of a very careful research on the development of the blood vessels in the kidney of the human embryo. His lecture was illustrated by means of a large number of drawings and diagrams, and he clearly demonstrated the processes by which the arteries of the kidney assume their position between the medulla and cortex. At this meeting also a paper on the treatment of superficial carcinomata by the X-ray was read by Dr. Gilchrist. Especial interest was added to his report by the fact that he had three of his four patients at the meeting, so that the members might see the results of his treatment. They were all cases of rodent ulcer, situated on the face, and all showed a complete healing of the areas involved by the malignant disease. In one of the cases sections had been taken from the diseased focus before and after the treatment, and by these he demonstrated the complete eradication of the carcinomatous tissue.

At the meeting held on Nov. 3rd, the first business was the election of officers. Dr. Osler, who occupied the chair during the past year, was out of town, and Dr. Hurd presided at the meeting. By a unanimous vote of those present, Dr. J. W. Williams, Professor of Ob-

stetrics, was elected president, and Dr. M. B. Tinker, Second Assistant Resident Surgeon, was elected secretary. The meeting was in the nature of a clinic, and several rather rare conditions were exhibited and discussed. The first case was presented by Dr. McCræ. The patient, a man in middle life, had had a rather prolonged attack of typhoid fever during the past summer, and on Sept. 12th was discharged from the Hospital as well. For some time he was too weak to work, but finally resumed his trade—that of a butcher. He continued at work for a week, when, after lifting a couple of quarters of beef, he was suddenly taken with a severe pain in his back. He was readmitted to the Hospital Oct. 30, and his condition diagnosed as that of typhoid spine. The patient presents another interesting feature, namely—rhythmical contractions of the abdominal muscles. The contractions average seventy-five per minute, and continue all the time the patient is awake. During sleep and for about five minutes after waking, the contractions are absent. They are unaffected by ice bags or ether. The patient is extremely neurotic and this is considered the cause of these peculiar contractions.

A second case from the medical wards was presented as an instance of mistake in diagnosis. The patient was seized some months ago with a very severe pain in the abdomen, which at times extended down the thigh and into the testicles. He went to a hospital in Baltimore for treatment. His trouble was diagnosed as nephrolithiasis, and operation was advised. The operation was performed and a large aneurism of the abdominal aorta was found. He recovered from the operation, but the symptoms were not relieved. He is now in the Johns Hopkins Hospital. Pulsation is seen and felt in the epigastrium to the left of the median line when the patient is on his back. In the erect posture all pulsation disappears from the anterior abdominal wall and a systolic retraction is seen in a position in the back corresponding to the pulsating area seen when the patient is lying down. He is in constant pain, to such a degree that the constant administration of morphine is required to secure comfort.

Besides these two cases, Dr. Fallis presented two surgical cases, both showing good recovery after intestinal obstruction complicating appendicitis.

Pathologic material was exhibited by Drs. McCallum and Cullen. The case of greatest interest presented by Dr. McCallum was one of an enormous aneurism of the thoracic aorta. The patient had been under observation since 1898, and at times had shown improvement under treatment by gelatine injections. Within the last few months severe pain had developed and death came as a result of

hemorrhage from the mouth. The autopsy showed a large saccular aneurism of the thoracic aorta beginning just below the left subclavian artery and extending for eight inches down the aorta almost to the diaphragm. The tumor occupied the left side of the posterior part of the thorax, had eroded the ribs and vertebral column, and was so large as to cause collapse of the left lung and a flattening of the heart against the anterior thoracic wall. The posterior wall of the sac had entirely disappeared, but this part of the sac being occupied by a large white thrombus, no bleeding had occurred into the thorax. The fatal hemorrhage had taken place through a large opening which had been eroded into the œsophagus. R. G. W.

BUFFALO LETTER.

One of the important additions made to the University departments in the past few years is the pathological laboratory for the investigation of cancer. This laboratory is now under the direction of Dr. Daniel Lewis, the State Commissioner of Health, and its expenses are for the most part defrayed by state appropriations. The laboratory—a gift of Mrs. Gratwick, made in memory of her deceased husband—is now housed in a new and beautiful $3,000 structure. It is superfluous to speak of the views of the directors, Drs. Roswell Park and Harvey R. Gaylord, upon the parasitic nature of cancer. They have written much upon this subject, and, though their theories have as yet not received the confirmation of all pathologists and workers, nevertheless the recent works of Van Leyden and other German investigators are confirmatory of what has thus far been done at the laboratory.

Buffalo has the enviable reputation of being one of the most healthy cities in the United States, and all honor is due the name of Ernest Wende, who so unremittingly, intelligently, and perseveringly worked to bring about this great improvement in the city's health record. It is unfortunate that politics robbed Buffalo of the services of this celebrated sanitarian. The good results achieved are being continued by Dr. Green, the present Health Commissioner.

Recently by order of the health department, 54,000 books in use in the public schools were disinfected with formaldehyde. The smallpox epidemic is being successfully handled and vaccination of all the pupils in public and parochial schools is being carried out. Typhoid fever is not epidemic here. The cases are isolated and occur for the most part in those who have been summering in camps or in the mountains.

The Buffalo Anti-Tuberculosis Society is an institution which

merits the support of everyone. As its name implies it was organized to fight the "great white plague," and it does so by educating the masses to recognize the disease and to use prophylactic measures against its spread. Lecturers thoroughly conversant with the subject of tuberculosis are selected to address various societies, lodges, etc., and it is hoped by this educational campaign to stir the public to a proper recognition and appreciation of the dangers of this dread disease. J. U.

THE LAW AND ITS RELATION TO MEDICINE.

By EDWIN S. MACK, A. M. LL. B.

Privileged Communications to Physicians.

By the common law of England, which came into force in the American colonies and then in the American states, communications by patient to physician were not regarded as privileged, and a physician could be compelled as a witness to disclose all information he had acquired from his patient. The injustice of this rule must have been early apparent, but legislation to remedy it came slowly. Greenleaf, writing in 1858, cites only five states in America where such legislation had been adopted. To-day, however, this privilege is universally recognized, and courts have been liberal in interpreting the statute to protect the sacredness of the relation between physician and patient.

In Wisconsin the statutes of 1898 provide (Section 4075):

"No person duly authorized to practice physic or surgery shall be compelled to disclose any information which he may have acquired in attending any patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician or to do any act for him as a surgeon."

This statute is broader than many in other states, because it applies not only to *communications* by the patient, but to *information* of every nature. Thus a physician is not only precluded from testifying as to the patient's statement to him of his symptoms or of the origin or nature of his ailment or injury, but he is also not permitted to disclose facts learned from his own examination of the patient. For example, in a will contest in New York, it was held improper to permit a physician to testify that his patient had been in a state of collapse. (*Renihan vs. Dennin*, 103 N. Y. 573.) The statute, however, is limited strictly to physicians and surgeons—for instance, dentists are not included. Likewise the privilege applies only to information

"acquired in attending a patient in a professional character," and therefore a physician may testify as to his observations of the patient outside of his professional relations. Thus physicians have been permitted to give opinions as to the mental or physical condition of persons, basing their answers solely on information acquired without the scope of their professional duties. It is a little difficult to say just how a physician can separate in his own mind the information he acquired in one capacity from that gained in another, but the law permits a physician to give such testimony if he feels he can do so.

Another restriction on the privilege is that the information given the physician must be such as was "necessary to enable him to prescribe for such patient as a physician or to do any act for him as a surgeon." The word *"necessary"* has been liberally construed, and to quote Justice Dodge of the Supreme Court of Wisconsin, includes "all statements or information in good faith asked for or given to enable intelligent treatment, although it may appear that the physician might have diagnosed the disease and prescribed for it without certain of the information, so that it was not strictly necessary" (102 Wis. 47). In this spirit of liberality in a number of cases courts have held physicians not obliged to disclose the statements made to them by patients as to the circumstances under which personal injuries were received. On the other hand, there are cases that show the limitations of the rule, such for instance as an Arkansas case which holds that a communication by a woman in confinement that she was not married, was not privileged because it was not in any sense necessary for the physician to prescribe. Cases of this kind, however, are exceptional. The nature of a physician's office requires the closest confidence between him and his patient, and the tendency of courts is growing toward liberality and the cases must come ultimately to the point where the word *"necessary"* will be held to include all statements made by patient to physician at the time of consultation for treatment.

It must be borne in mind, however, that the mere fact that statements are made to a physician does not make them privileged; they must be made to him by one in the relation of a patient, or as the statute puts it, they must be necessary to enable the physician to *prescribe.* The word *"prescribe"* is also to be construed liberally, and is not to be limited merely to include a direction to use specific drugs; but to be held to mean "to advise or appoint or designate a remedy for disease." Thus the statute covers all information acquired or ascertained by a physician for the purpose of advice or treatment. It does not, however, cover information acquired where the physician's purpose was not to cure or alleviate an illness or injury. So it was held

where a physician examined a patient, not for the purpose of treatment, but in order to determine her mental condition to ascertain her competency to care for her property with a view of her applying to a court for her release from guardianship, that the information so acquired was not privileged, and the physician could be required to testify to it.

It will be noted that the statute provides that a physician shall not be *compelled* to disclose any information. The privilege, however, is not that of the physician, but of the patient, and therefore the word *"compelled"* has been read as if it were *allowed;* and it has been held that a physician will not be permitted to testify, even if he himself be willing, unless the patient waive objection. The privilege of the patient is a personal one, and so question has arisen as to the possibility of waiver after the patient's death. In some jurisdictions it has been held that after death no one can waive the privilege; and in many cases this has led to great hardship, as in suits on insurance policies where it was to the interest of the patient's estate to establish the cause of his death. For this reason in other jurisdictions it has been held that the personal representatives of a patient may waive the privilege after the patient's death where this is for the benefit of his estate.

The Supreme Court of Wisconsin has been liberal in its rulings in favor of this privilege, and the Court has stated, although not by way of actual decision, that a physician would not be allowed to testify, even as to the fact that he has treated a patient for a disease or as to the number of visits paid. It is to be doubted, however, whether such a rule would be applied in a suit between physician and patient. For, if it were maintained, it would practically prevent a physician from maintaining an action for compensation for his services; and in other states, for example in New York and Michigan, the court has held that the fact that a man was treated for a disease, and the number of treatments had by him from his physician, were not matters protected by this privilege.

RECENT CASES.

The supreme court of Indiana in the case of *Baker vs. Hancock* (64 N. E. Rep. 38), has laid down the rule that a higher degree of care and skill is required of a specialist than of a general practitioner in the treatment of any particular case. The suit was one brought against a practitioner who advertised by circulars and in the public prints that he was a specialist in the treatment of cancer. The court held that his representation to the public that he was a specialist in the particular disease implied peculiar and special knowledge in the

treatment of that disease, and that not merely was he bound to bring to the treatment of the disease the degree of skill and knowledge that a general practitioner would be expected to have, but he would be required to have "that degree of skill and knowledge which is ordinarily possessed by physicians who devote special attention and study to the disease, its diagnosis and treatment, having regard to the present state of knowledge."

The case of *Ebney vs. Mackay* (186 Ill. 297), was decided some two years ago, and is not strictly recent, but it is interesting to physicians in that the supreme court of Illinois there decides that a physician treating a patient must in the first instance determine how often he ought to visit him, and that unless the physician is instructed to the contrary or the patient makes objection at the time because of the too great frequency of the physician's visits, the physician is entitled to compensation for all the visits he pays.

The case of *White vs. State* (32 So. Rep. 129), in the Supreme Court of Georgia, is an interesting example of how far courts will sometimes go in admitting evidence as to blood stains. The general rule is that any person, whether qualified as an expert or not, may testify that he observed a spot, and that it looked to him like blood, and that an expert who has sufficient knowledge and experience may give his opinion as to whether or not certain stains were those of blood and whether or not the blood was that of a human being. The Supreme Court of Georgia in this case permitted a physician to testify as an expert, although he had made an examination of the stains only with the low lens, and although he himself testified that he could not swear positively whether or not the stains were those of blood. Such evidence amounted to no more than a guess on the part of the physician, and must have had an undue weight with the jury, who would undoubtedly give it greater significance because of the professional character of the witness. Expert testimony ought to be confined to the most accurate basis of information that the existing progress of the science permits; and a physician in all cases before testifying as to the character of stains supposed to be blood, should inform himself fully as to the physical and chemical tests, and be prepared to testify exactly what the tests are and what the result of their application to the particular case has been.

BOOK REVIEWS.

CLINICAL SURGERY FOR THE INSTRUCTION OF PRACTITIONERS AND STUDENTS OF SURGERY. By A. J. OCHSNER, B. S., F. R. M. S., M. D., Chicago, Professor of Clinical Surgery, Medical Department University of Illinois. Clinical Review Publishing Co., Chicago.

The author of this volume is so widely known as one of the progressive and productive surgeons of this country, that any book reflecting his methods will surely receive eager scrutiny. Dr. Ochsner, in his preface, modestly disclaims any credit for originality in the operations which he has selected as those of choice for the conditions encountered; but, whether he pursue original methods or not, the fact that he has made others' approved methods his own—this it is that in reality proves the soundness of his surgical equipment. The book is divided into seventeen chapters, embodying most of the important operations upon the various parts of the body. Copious, and, with few exceptions, original illustrations, elucidate the text: they are well chosen, well proportioned, and pictured in such satisfactory detail that the various steps in the operations are easily followed. These features make the book an excellent operative guide, no claim being made for it as a textbook of surgery. In speaking of traumatism incident to surgical operations, the author says that "above all things a surgeon should form the habit never to manipulate tissues needlessly, and especially not to manipulate organs which are not involved, and which might readily be left untouched." Dr. Ochsner is evidently not in accord with the teachings of those surgeons who examine every organ within reach of the hand, even though no indications for such interference exist.

Aside from a number of careless grammatical inaccuracies—this volume deserves every commendation, and must rank high as an efficient and safe guide to the general surgeon, and more particularly to "the man who is compelled, by virtue of the circumstances surrounding him, to do surgery." A. J. P.

A MANUAL OF MEDICAL TREATMENT OR CLINICAL THERAPEUTICS. By I. BURNEY YEO, M. D., F. R. C. P., Emeritus Professor of Medicine in King's College, London, etc. 2 vols. 10th ed. Price, $5.00. W. T. Keener & Co., publishers, Chicago, 1902.

An extract from the preface to the first edition (1893), states the object of this book to be "the study of disease from the point of view of treatment. The teaching of therapeutics is here approached from the side of the disease, and not from the side of the drug or remedy—a method which has been thought more natural and more interesting

than the one usually adopted." The publication of a tenth revised edition is an indication of the merits of Dr. Yeo's work.

The arrangement of the book is such that a synopsis of the etiology, pathology, and symptomatology of the disease precedes the treatment and serves for the deduction of rational indications for treatment. The value of the latest remedies and the most recent methods of treatment are critically discussed, the work throughout showing evidence of the careful examination and sifting of the subject matter. Selections of formulæ by prominent physicians, both European and American, are added to most of the chapters. Although this edition is brought out by an American publisher it has not been made to conform to the United States Pharmacopeia. The general index, a model of completeness, is appended to the second volume, with a special index of the principal authorities quoted or referred to. The appearance of the work, its clear type, and wide marginal space, and the convenient size of both volumes are to be commended. O. H. F.

CLINICAL METHODS; A GUIDE TO THE PRACTICAL STUDY OF MEDICINE. By ROBERT HUTCHISON, M. D., M. R. C. P., Assistant Physician to the London Hospital and to the Hospital for Sick Children, Great Ormund Street, and Harry Rainy, M. A., F. R. C. P., Ed., F. R. S. E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. With upwards of 150 illustrations and 8 colored plates. Cloth. pp. 612. Chicago: W. T. Keener & Co. 1902.

This little work on clinical methods is comprehensive, and includes a great deal within a small space.

The subjects are taken up systematically and the description of the methods of clinical investigation is quite lucid. One is especially pleased with the scheme for case-taking and with the careful attention given to the subject of general condition and appearances.

The special chapter on the clinical examination of children is practical and up-to-date. The diagrams and colored plates are more numerous and of better quality than one would expect to find in a book of its size, and add materially to its value to the student as well as to the general attractiveness of the work. Altogether, the book is to be heartily commended. C. G. W.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE. For the Use of Physicians and Students. By JAMES TYSON, M. D., Professor of Medicine in the University of Pennsylvania, etc., etc. Tenth Edition. P. Blakiston's Son & Co., Philadelphia. 1902.

This little book, which has now passed to its tenth edition, is so well known to the profession at large that an extended review would

appear to be entirely uncalled for and out of place. It is a book that has been widely adopted in the medical colleges of the country as a laboratory guide in urinalysis, and the present edition, while little if any larger in size than its predecessors, has been brought up to date in many matters of detail, and will undoubtedly hold its place as a favorite with laboratory instructors and medical students.

To the physician in active practice the conciseness of the present volume will commend itself, there being no prolixity of detail, or superfluity of diction.

The book will further recommend itself to the busy practitioner by reason of the brief comments on the clinical significance of the various urinary constituents and sediments. W. H. W.

CURRENT MEDICAL LITERATURE.

MEDICINE.

Dr. W. H. Washburn, Dr. Jos. H. Kahn, Dr. O. H. Foerster.

Paratyphoid Fever.—In the *American Journal of the Medical Sciences*, August, 1902, there appear three articles on this general subject: Report of Four Cases by WILLIAM B. JOHNSTON; Report of a Case of Paratyphoid Fever by ALBION WALTER HEWLETT; and Paracolon Infection, together with the Report of a Fatal Case, with Autopsy by WARFIELD T. LONGCOPE.

These are three very interesting papers and are very suggestive as to the explanation of many cases which have hitherto been regarded as anomalous cases of typhoid fever. While some of the cases reported and in which the paratyphoid bacillus was found in the blood and urine, presented a clinical picture identical with typhoid fever, including diarrhea, intestinal hemorrhage, delirium, bronchitis, mental hebetude, rose-colored eruption, and termination by lysis, most of them presented more or less striking deviations from the course ordinarily pursued by typhoid fever.

The deviations noted have been various: rather rapid onset; constipation throughout the disease; absence of rose-colored eruption; termination by crisis; negative Widal reaction; marked remissions in the first weeks of the disease; irregularities unassociated with complications. Johnston, at the close of his paper, suggests that absence of intestinal ulceration may prove to be a distinctive feature of the disease, and concludes that there is a type of disease due to infection with the paratyphoid bacillus which in all its variations presents a clinical picture identical with that frequently produced by infection with bacillus typhosus.

The case reported by Hewlett presented all the essential clinical features of typhoid fever, except the presence of a palpable spleen and a typical Widal reaction.

One of the cases reported by Longcope (of Philadelphia) is particularly interesting because it came to autopsy, the result of which was in line with

the suggestion contained in the paper of Johnston, that is, there was complete absence of the intestinal lesions proper to typhoid fever. Moreover, histologically studied the spleen and lymphatic structures of the intestinal tract showed none of the changes specific to typhoid fever, which are present in those cases of typhoid fever in which intestinal ulcers have not been found.

Longcope is of opinion that, though broad conclusions are not permissible at the present time, the wide distribution of the bacillus in the body, its constant occurrence in the circulating blood, and the absence of local lesions, are strongly suggestive that the condition is one of general infection, and that inasmuch as typhoid fever itself is a general infection plus local lesions it is not surprising that the symptoms of these two affections should be so similar.

Diabetes Insipidus.—THOMAS B. FUTCHER (*Johns Hopkins Hospital Reports*, Vol. X., Nos. 3, 4, 5) reviews the literature and reports five cases from which he draws the following conclusions:

1. The old classification of cases of diabetes insipidus under the headings of hydruria, azoturia and anazoturia is no longer tenable, the nitrogenous constituents of the urine being almost entirely dependent on the nature of the food.

2. Animal experiments have taught us much regarding the lesions of the central nervous systems which are capable of producing a temporary or permanent polyuria.

3. Clinically the cases of diabetes insipidus come under two headings: (a) The primary or idiopathic cases—those in which there is no evident organic basis for the disease. (b) The secondary or symptomatic cases—those attributable to definite organic changes either of the nervous system or abdominal viscera; to physical disturbances, etc.

4. It is difficult to decide in which group certain border-line cases should be placed.

5. Some observers classify those cases in which thirst is the first symptom, as an independent disease under the name of primary polydipsia. The evidence in favor of this view at the present time does not seem to be sufficient.

6. Tumors involving the medulla and floor of the fourth ventricle, cerebral hemorrhages, and basilar meningitis are the commonest organic lesions causing the disease.

7. Cerebral syphilis is apparently the cause of a larger number of cases than is generally supposed, the lesions most frequently being a syphilitic basilar meningitis.

8. Diabetes insipidus is uncommon in this country, only 4 cases, or 0.001 per cent., occurring out of a total of 356,637 cases treated at the Johns Hopkins Hospital and Dispensary.

9. The five cases here reported were all in males, their respective ages being 44, 32, 25, 36, and 35 years.

10. The longest duration of the disease was 10 years. (Case 1.)

11. Four of the five cases gave evidence of marked cerebral disturbance.

12. One case (Case 1) belongs to the primary or idiopathic group; the other four being regarded as secondary or symptomatic cases.

13. Case V was undoubtedly due to cerebral syphilis. Cases II and IV were in all probability due to the same disease. Case III was apparently due

to cerebral disease, as evidenced by the history of convulsions and unconsciousness preceding the onset. Case 1 was of unknown origin.

14. In all five cases thirst appears to have been the first symptom; at least it seems to have been the first that attracted attention.

15. An interesting finding was the presence of exaggerated knee-jerks in four of the cases. In the other case (Case III) they were diminished.

16. There is usually no marked disturbance of the metabolic functions. Worthy of note, however, is the fact that in Case I the patient added over 49 grams of nitrogen to his body with a very slight loss of weight.

17. The nature of the disease is still uncertain. What can be said with certainty is, that it is due to some nervous influence causing a vaso-motor disturbance of the renal vessels, leading to constant congestion of the kidneys.

18. There is no constant anatomical finding at autopsy. The most frequent one is enlargement and congestion of the kidneys.

19. The prognosis is much less favorable in the secondary or symptomatic cases.

20. The treatment is very unsatisfactory. Therapy usually fails to give relief. In the syphilitic cases antiluetic treatment at times causes a marked improvement in the general health as in Cases II and IV., and also occasionally an almost complete cessation of the thirst and polyuria as in Case IV. On the other hand syphilitic treatment may be of no avail as in Case V.

Prognosis and Treatment of Tubercular Peritonitis.—FREDERICK C. SHATTUCK, of Boston, (*American Journal of the Med. Sc.*, July, 1902), presents his conclusions on this subject based on a study of 98 cases occurring in the Massachusetts General Hospital from 1889 to 1900. Of these cases the end-result is known in 57 cases, 25 treated in the medical wards and 32 in the surgical. The mortality under medical treatment has been 68 per cent., whereas under surgical treatment it has been 37.5 per cent. The medical treatment was symptomatic and hygienic. The main therapeutic lessons to be derived from an analysis of these cases are summarized as follows:

1. Tubercular peritonitis, even if complicated by tuberculosis elsewhere, may be followed by apparently complete recovery, either under (a) purely medical treatment; (b) tapping; (c) incision.

2. As in other forms of internal tuberculosis, the best obtainable hygienic surroundings are all important. Consequently no patient should be kept in the hospital longer than is necessary, especially if more and better air can be secured outside with proper care and food.

3. We are warranted in trying medical treatment for a time, especially under first-rate hygienic conditions, tapping the abdomen if there is sufficient fluid to cause discomfort.

4. If the patient under a month or six weeks of medical treatment fails to improve, or in even less time if he seems to be losing ground, surgical treatment should be advised.

Diagnosis of Aortic Aneurism.— SHROETTER (*Wiener Klin. Wochenschrift*, No. 38, 1902), reports the case of a laborer of good personal history, who came to his clinic for some nasal affection.

Upon examination it was noticed that both carotids were large and tor-

tuous. This led to a careful investigation of the heart and blood-vessels, but except for some atheroma of the arteries of the upper extremities, nothing abnormal was found.

An X-ray examination revealed a pulsating shadow to the left of the sternum, reaching to the base of the heart, which was diagnosed as an aneurism of the upper portion of the descending part of the arch of the aorta.

The laryngoscope showed a slightly lessened action of the left vocal cord which was not sufficient, however, to justify a positive opinion that it was due to pressure on the recurrent laryngeal nerve.

The case is interesting because it shows the possibility of an aortic aneurism without subjective and practically without objective symptoms.

Technique of Counting Leucocytes.—R. BRENER (*Berl. Klin. Wochenschrift*, 1902, p. 953), has designed a counting chamber for leucocytes, which he claims facilitates the count and overcomes the inaccuracies incident to the use of the Thoma Zeiss chamber. Brener's chamber has a surface area of nine square mm., each square mm. being divided into four rectangles, one-fourth mm. in height and one mm. in breadth. The rectangles, thirty-six in number, are the counting units.

Lactophenin of Typhoid Fever.—During an epidemic of typhoid fever, in which, for various reasons, the bath treatment was not applicable, v. SCHULER (*Berlin. Klin. Wochensch.*, 1902, p. 957), treated 450 cases with lactophenin, giving one gram of the drug three times a day. Under this treatment the mortality was 9.8 per cent., and septic complications were infrequent. A marked antipyretic action of the drug was observed except in three per cent. of the cases without unfavorable influence on the heart; it also acted as a nerve sedative and controlled delirium readily, although, in the dose of one gram, it was powerless to relieve peripheral nerve pain. Its favorable influence on the gastro-intestinal tract v. S. ascribes to its contained lactic acid (almost 50 per cent.) liberated in the stomach and intestine.

No deleterious after-effects from prolonged administration of the drug were observed, although in two instances decided chills followed the rapid fall in the temperature (4° C. in two hours). v. S. considers the treatment of typhoid fever by lactophenin as second only to the bath treatment.

Physiological Albuminuria.—v. LEUBE (*Deut. Med. Wochensch.*, Vereins Beilage No. 42, 1901), mentions as causes of physiological albuminuria—the erect position, muscular exertion, diet, emotional disturbances, cold baths, etc., the first named being of greatest importance.

These factors are active only when the kidneys are predisposed to the transudation of albumen into the urine.

v. Leube explains this individual predisposition by assuming that there is an abnormally pronounced permeability of the filtration membrane of the kidneys, and believes that this may account for the cases of physiological albuminuria that occasionally occur in several members of one family.

He distinguishes physiological albuminuria from albuminuria of puberty, the latter being caused by a perverted condition of the blood or by cardiac insufficiency in rapidly growing individuals. Physiological albuminuria demands no treatment, but the albumin of puberty can be improved or cured by improvement in general health and of the heart's action.

SURGERY.

Dr. F. E. Walbridge, Dr. H. A. Sifton, Dr. F. Shimonek.

Gall Stones.—KEHR (*Berl. Klin. Wochenschr.*, Oct. 6, 1902), makes some timely deductions from 720 operations for gall stones. In his cases icterus was absent in 80 per cent. of cases in which stones were found only in gall bladder or cystic duct, and in 30 per cent. of cases in which stones were found in hepatic or common duct.

Few cases were cured by spontaneous formation of fistulous connection with the intestines. In 30 such cases operated upon Kehr found stones remaining which at any time might have done harm.

When attacks of pain are light and not very frequent with complete absence of symptoms during intervals, Kehr does not advise operation. He does not as a rule operate after a single attack of obstruction of the common duct. If the attack continues with loss of appetite and icterus and failing strength, operation is indicated. All cases of hydrops and empyema of the gall bladder with pericholecystitis are regarded as surgical.

Women, especially those who have borne children, are the best subjects, as men, especially fat men, do not stand operation well. Patients suffering from diabetes, arteriosclerosis, chronic nephritis, and heart or lung disease, should be operated upon only when this measure is absolutely demanded.

Kehr favors, more and more, cholecystectomy in place of cholecystotomy. He has entirely abandoned suture of the choledochus.

Gall Stones.—OCHSNER (*Clinical Review*, July, 1902), says that there are two things absolutely necessary for the production of infectious diseases of the bile passages and stones, and those are, infection and obstruction. It seems that the free flow of normal bile is perfectly able to remove the infectious material from the gall bladder and ducts, but when obstruction occurs, cholecystitis, cholangitis, and cholelithiasis rapidly develop. The sources of infection are the intestines; the colon and typhoid bacilli are frequently found in gall stones. The causes of obstruction are adhesions, produced, among others, by appendicitis and gastric ulcers, and tight lacing, etc. Ochsner claims that in biliary colic it is very important to keep the stomach at absolute rest, as the traction of the moving stomach aggravates the pain. The greatest frequency of occurrence of hepatic colic is some time after eating. He says that emptying of the stomach may quickly stop the pain even when three-quarters of a grain of morphine hypodermically has failed.

In the course of his argument of the medical treatment of cholelithiasis, which consists of careful feeding, small quantity of easily digestible food, large amounts of hot water, olive oil, and during the acute attack, resting the stomach and morphine, he says: "For all cases then, which can be relieved in this manner with any degree of permanency, and for those who are unwilling to undergo continuous medical and hygienic treatment for the sake of securing relief from the paroxysms without being relieved of their gall stone, nothing remains but the removal of the gall stones by an operation." It seems to me that instead of placing surgical intervention last it should ordinarily come first, for it is a known fact that only a very small percentage of gall stones are permanently cured by medical means at our disposal. The frequency of carcinoma, hepatic, and peritoneal infections, would loudly proclaim, first of all, the necessity of surgical intervention.

Results of Operation on the Kidney for Tuberculosis.— DR. EDWARD GARCEAU in *Annals of Surgery* for October, 1902, discusses the results of operations on the kidneys for tuberculosis in 194 cases collected by himself, to which he has added a collection by BANGS (*Annals of Surgery*, 1898, Vol. XXVII.), and also FACKLAM'S collection (*Die Wegen Nierenphthisie vorgenommenen Nephrotomien*, etc., *Archiv für klinische Chirurgie*, 1893, Vol. XLV.), making in all 415 cases. From his analysis of these cases he has come to the following conclusions:

(1) Tuberculosis is rarely, if ever, primary in the kidney, and the original focus is in some other organ in more direct contact with the external air in the majority of cases.

(2) The presence of a primary focus of disease in the body, even if the disease has been thoroughly eradicated from the urinary tract, makes the ultimate prognosis in these cases doubtful, at least.

(3) Such foci may remain permanently quiescent, but they may also become excited to activity by a generally low condition of the system, or by causes unknown to us.

(4) Patients should be told of the danger as regards the future for them, and they should lead lives of the greatest regularity, with strict attention to hygiene. A change of climate is very beneficial in these cases.

(5) Reported cures of long duration occur, but they have been few.

(6) Nephro-ureterectomy should be done in all cases in which the ureter is diseased, and the patient's condition allows of it. The bladder should be subsequently treated if diseased.

(7) An abandoned tuberculous ureter is an especial source of danger on account of the great liability of subsequent tuberculosis.

(8) Nephrotomy alone should be rejected except as a preliminary to a later nephrectomy.

(9) Resection is not justifiable, for we can never be sure that the portion removed is the only portion diseased.

Removal of the Bladder and Prostate for Carcinoma Through a Supra Pubic Opening.— MALCOLM L. HARRIS (*Annals of Surgery*, October, 1902), reports a case in which, after a history of bladder irritation and hematuria, the diagnosis of carcinoma of the bladder, probably extending to the prostate, was made by cystoscopic examination. On suprapubic section (extra peritoneal) it was found that to remove the disease in toto it would be necessary to remove the base of the bladder and the entire prostate; this was done by dividing the urethra at the triangular ligament, separating the bladder from the rectum from before backward. The apex of the bladder not being affected was retained and the ureters were implanted in it. This part of the bladder was then stretched to the inner edge of the suprapubic wound except at the lower part. The cavity in the pelvis was packed with gauze and the cul de sac drained by a large rubber tube. After rallying from the shock the condition was satisfactory. The cavity filled in rapidly. The ureters emptied freely into the small bladder and a catheter could be inserted through the urethra into it, draining off nearly all the urine. The patient's general health was improving, but two months after the operation he died of croupous pneumonia. At the autopsy "the ureters were patent throughout, and their openings free. The right had contracted to its normal size." "A remarkable

formation of a tongue-shaped process, lined with epethelium was found, continuous with the lower end of the bladder, surrounding the catheter and extending almost to the posterior end of the urethra, a distance of some 5 or 6 cm."

The author cites Wendel's reported cases, giving a mortality of 60 per cent. The high death rate is due either to shock or collapse and uræmia. The first can only be reduced by improved technique; the second, uræmia, is due to prolonged anæsthesia, and to the interference with the ureters. The implantation of these into the rectum or other parts of the bowel, has been shown to be unjustifiable, as it is almost certainly followed by an ascending pyelonephritis. For this reason the retention of a small portion of the normal bladder wall into which the ureters can be implanted, is advocated. The reproductive power of the bladder is so great that even a very small part, retained, may develop into a suitable receptacle for the urine.

Tuberculosis of the Intestine.—MAYO ROBSON, writing upon this subjeet in the *Lancet* of September 27, 1902, gives a review and a report of seven cases. He speaks particularly of two varieties—those in which the intestinal wall is principally involved, the disease being local, and those in which the process is wide-spread, involving the peritoneum and other organs. He advises the complete removal of the diseased area when possible. When the process is wide-spread, a considerable portion of the intestinal canal being involved, with extensive adhesions, it is manifestly impossible to remove the entire diseased area. Under these circumstances he advises intestinal anastomosis so as to short circuit the diseased portion. In one case reported, the lower three feet of the ilium and the ileo-cœcal region was involved in the diseased area. A short circuit was made by an anastomosis between the ilium above the diseased portion and the transverse colon. Recovery took place and the man was apparently in perfect health two years after the operation. It is now well recognized that some cases of tuberculosis of the intestine completely recover both with and without operation. The author is of the opinion that many of the cases that have been diagnosed as cancer and have recovered, have really been tubercular.

Cure of Extrophy of the Bladder with Continence of Urine.—F. TRENDELENBURG (*Münch. Med. Wochenschr.*, XLVIII., 44, 1901), describes three cases of total exstrophy of the bladder which he treated by this method of operation. Two of the cases are still under treatment. The third, considered cured, is that of an eight-year-old boy who can now hold his urine for a period of two hours the quantity of urine retained measuring 50 c. cm. or more. It is evacuated in a full, generous stream. This result was obtained after five successive operations, which are given in detail and illustrated.

Infections Involving the Lateral Sinus and Jugular Vein.—CHARLES A. BALLANCE, writing in the *Lancet* of September 20th, 1902, contributes a very extensive article on the subject. After reviewing the history, anatomy, modes of infection and symptoms, he goes very thoroughly into the treatment of this very dangerous and fatal form of infection. He is of the opinion that a very careful study of every case should be made and that the surgeon should come to a clear understanding as to whether the patient is suffering

from an acute systemic infection or an acute systemic disturbance depending upon a local process, so that he will be able to determine beforehand the nature and extent of the operation necessary. If it is impossible to form this clear picture of the process, all doubt as to the exact nature of the case should be cleared up at as early a stage of the operation as possible. He is decidedly in favor of the ligation of the jugular vein in most cases. He recognizes the fact that this is not the only path by which infection may gain access into the general circulation, though it is the usual one. He admits that the ligation and extirpation of the jugular vein, which he recommends, is neither easy nor safe, but he argues that the condition for which we operate is an exceedingly grave and dangerous one, and the surgeon who is competent to deal with such cases should be able to extirpate the entire jugular vein without any great added risk. He thinks the vein should be tied and opened up in every case in which pyemia exists—whether the sinus is occluded or not—when the walls of the sinus are infected or gangrenous, or when the blood in the jugular vein, its bulb or sinus, is clotted. The author is profoundly convinced that we must deal with these cases in an exceedingly radical manner, laying the sinus and jugular vein open in one continuous wound, if possible, so as to give perfect drainage, if we wish to succeed in arresting the septic process.

PATHOLOGY AND BACTERIOLOGY.

Dr. John Beffel, Dr. C. G. Willson.

Actinomycosis Hominis in America, etc.—WILLIAM G. ERVING, M. D. (*Bulletin Johns Hopkins Hospital*, November, 1902).

The first cases in this country were reported by Murphy, of Chicago. There are now 100 cases on record. Six cases are reported by Erving, one in the face, one in the chest, four in the abdomen. The diagnosis was made from the sulphur granules, which showed the ray fungus. Usually there is no definite history of infection; the disease is found in ages varying from 6 to 70 years. The disease is chronic; of 44 cases 62 per cent. lasted over six months, and in 27 cases 37 per cent. over one year.

The treatment was free incision and curettage, irrigations of weak bichloride of mercury, packing with iodoform gauze, and potassium iodide internally.

Report of Two Testicular Teratomata, etc.—H. W. CAREY, M. D. (*Johns Hopkins Hospital Bulletin*, November, 1902), reports two cases:

Case No. 1 shows the tumor to be made up of cysts lined by flattened epithelium in the larger cysts. Some cysts contain both squamous and columnar epithelium; still others are lined with simple columnar epithelium. There are also numerous cell nests. The stroma shows white fibrous and myxomatous connective tissue, plain muscle cells, and cartilage. This tumor was encapsulated.

Case No. 2 shows cysts lined by columnar epithelium, peculiar masses of cells with no stroma. These cells are polyhedral in shape and of the size of decidual cells. Syncytial masses are also noted. There is, however, no cartilage, elastic tissue, or bone present. Plain muscle fibres are found in abundance.

The writer suggests that this is probably a teratoma undergoing malignant transformation, and that the malignant element is the syncytium. The irregular

"cells," which he designates as cells of Langerhan's layer (see Plate 14). Then follows a review of 24 cases of testicular teratomata. He concludes that "all three germ layers are represented in these growths, and also that placental tissue is present; as in his own case and those of Schlagenhaufer the three germinal layers are not developed equally, but the endoderm and mesoderm are always in excess of the extoderm." Teratomata can be malignant by growth along blood vessels or lymph channels, the secondary growth being composed of derivatives of one or more of the three germinal layers. "Malignant new growths originating from the tubules of the testes, and teratomata testes may exist simultaneously."

(I should like to suggest that all of the portions of the teratomata said to be of entodermal origin, might be of either mesodermal or ectodermal origin. As for congenital tumors, showing placental tissue, it seems hardly probable. We must not forget the diverse forms assumed by epithelium at times, and the even more diverse forms assumed by the endothelium. J. M. B.)

A Case of Necrosis of the Large and Small Intestine—with Hemorrhage Into the Tissues Produced by Streptococci (Enterococci).—DR. H. T. HARRIS (*New York Med. Jour.*, Nov. 1, 1902), reports extensive necrosis of the intestinal mucosa, with marked changes in the deeper layers of the intestinal walls, due to invasion by the enterococcus of Escherich.

The case was that of a primipara, in a state of eclampsia, quickly followed by coma, upon whom Cæsarian section was performed on account of a highly contracted pelvis. Patient died of exhaustion on third day.

Upon post-mortem examination—besides the lesions of the intestines—profound alterations were found in the kidneys, and to the lowered resistance of the body, resulting from the renal disease, the author attributes, in a large measure, the pronounced character of the changes in the intestine.

The most interesting alterations observed were those in the intestinal blood vessels. The outer and middle coats of the vessels in or near the areas of greatest change had undergone such alterations that their real character could not be determined; in many instances they appeared hyaline. All the tissues within the internal elastic lamina, in those instances where the outer walls were greatly changed, were more or less completely torn away from this membrane and lay curled up in the lumena of the vessels. The nuclei of the endothelial cells, and other tissues of the internal coat, stained fairly well. No distinct clot was found in any of the vessels.

The Serum Diagnosis of Tuberculosis.—L. M. LOEB, M. D. (*Chicago Pathological Society*, Oct. 15, 1902).

In regard to the value of the serum diagnosis of tuberculosis, Loeb concludes the following:

"1. Under various conditions animal sera agglutinate homogeneous cultures of human tubercle bacilli in liquid media.

"2. Such sera may be obtained from the human or animal body without the presence in it of the bacillus tuberculosis.

"3. It is doubtful whether the agglutinated powers are ever due to the specific action of the baccillus tuberculosis.

"4. The presence or absence in the human blood serum of agglutinated properties for tubercle bacilli, is no evidence of the presence of tuberculous lesions in the body."

On Branching Forms of Certain Bacteria.—L. M. LOEB, M. D. (*Chicago Pathological Society*, Nov. 15, 1902.).

In studying a bouillon culture of tubercle bacilli which had accidentally been allowed to evaporate to one-half its original bulk, Loeb found the tubercle bacilli to be branching. He also succeeded in developing branched typhoid bacilli. He suggests that these changes in the form of the bacilli are the result of injury to the external membrane and extrusion of parts of the protoplasm (plasmoptysis). It is possible after restoration of osmotic equilibrium that a new membrane is formed which includes the extruded protoplasm.

A Successful Attempt to Cultivate the Bacillus Leprae.— G. VAN HOUTUM (*Jour. Pathology and Bacteriology*, September, 1902), removed portions of tissue from recent cases of leprosy. These he placed, after proper precautions, in a nutrient medium of fish broth, and found a bacillus developing in the broth similar in structure to those in the living tissue. Upon testing various nutrient media he found that one containing one-third beef broth and two-thirds fish broth was the best. The organism grows readily at 36 C. He says that it is imperative that the broth should have an alkaline reaction, as the slightest acid reaction prevents all growth. The organism cultivated by van Houtum differs from Hansen's bacillus in staining reactions and in size. The organism described by van Houtum, stains with methelyn blue after long exposure. It is decolorized by Gram's and Ziehl-Neelsen's stain.

OBSTETRICS AND GYNECOLOGY.

Dr. A. W. Gray, Dr. Wm. Thorndike.

The Causes, Prevention, and Cure of Puerperal Eclampsia.—REYBURN (*American Medicine*, Nov. 1, 1902) contributes a short but comprehensive paper upon this subject, arguing that toxæmia, resulting from deficient metabolism and retention of waste products is the great cause. He points to the usual gratification of an abnormally keen appetite which succeeds the early months of nausea and vomiting, and to the neglect of open air exercise and sufficient care of the skin as most important factors in etiology. Prophylactic treatment is indicated by the postulated causes. Diet should be largely limited to non-nitrogenous foods and all alcohol interdicted. Emphasis is laid upon etiology in treatment of all clinical manifestations of eclampsia, subordinating use of chloroform, chloral, veratrum viride, etc., to position of second importance.

Two Conditions Simulating Ectopic Gestation.—DAVIS (*American Journal of the Medical Sciences*, October, 1902) attention to reports cases to call the fact that pelvic hæmatocele is not always due to this cause. Experience has shown that irritation of the pelvic peritoneum from various causes may be followed by hæmatocele. Congestion of menstruation and mechanical violence, acting upon pelvic tissues altered by disease, may result in hemorrhage. The second condition referred to is retroverted pregnant uterus.

A positive diagnosis can be immediately made by abdominal section in either condition. In cases of marked retroflexion and retroversion of the pregnant womb as described, abdominal section and replacement are safer than continuation of the condition.

Pelvic Cellulitis as a Complication of Uterine Fibroids.—A. T. CABOT (*Boston Med. and Surg. Jour.*, Oct. 16, 1902) reports two cases of death following hysterectomy for uterine fibroids, due in both to a pelvic cellulitis, lighted up by the operation. Both autopsies showed the wounds of the operation perfectly clean, in one a small abscess containing half an ounce of pus was almost overlooked, having no distinct abcess walls. In both, the abcesses were beneath the parietal peritoneum of the pelvis, and showed no connection with either the stump of the uterus or the surrounding wounds. Both operations were followed by a sudden rise of temperature, followed by symptoms of profound septicæmia and death. The fibroids in both cases were probably the focus of the infection and had set up a septic process which, inactive at the time of the operation, was lighted up by the operative manipulation.

Dr. Cabot suggests that "in any case of hysterectomy for fibroids that are, or have recently been inflamed," careful examination of the pelvic walls be made for inflammatory conditions at the time of the operation. "This search should be directed especially toward the basis of the broad ligaments where they spread out on the pelvic wall, and where their lymphatics enter the glands that lie along the iliac vessels."

Total Abdominal Hysterectomy for Fibromata Uteri.—HERBERT R. SPENCER in (*Brit. Med. Jour.*, Oct. 11, 1902) says, that "fibroids should not be operated upon unless they give rise to definite and serious symptoms or threaten to do so, with the exception of large tumors in young patients, of cases of cystic change in the tumor, and of suspected malignant disease." All cases undergoing cystic degeneration should be removed. Large fibroids, even when not giving rise to debilitating symptoms, seem to exert a deleterious effect showing as a form of toxæmia, which disappears on removal of tumor.

Ideal operation when tumor is pedunculated is amputation; if sessile, enucleation. Enucleation of sub-mucous form of the latter through the cervix gives good results when tumor is not larger than an infant's head, and is not infected. When the tumors are very large, or multiple, or burrow deeply, enucleation is more dangerous than hysterectomy.

Hysterectomy may be (1) vaginal, when tumor is not larger than fœtal head; and (2) abdominal, when larger.

Abdominal hysterectomy may be (1) supra-vaginal, with extra-peritoneal treatment of pedicle; (2) supra-vaginal, with intra-peritoneal treatment of pedicle; (3) total abdominal.

Objections to first are long convalescence and liability to ventral hernia; to second (1) drainage not so good, (2) danger of internal hemorrhage, (3) sloughing of cervix, (4) infection of stitches, (5) internal adhesions and obstruction, (6) possibility of tumor being malignant, (7) possibility of development of cancer in the cervix. For these reasons the author thinks total hysterectomy the best operation. Objections to this are: (1) long duration of the operation, (2) danger to ureters, (3) danger of vaginal hernia. He admits that operation is longer, but does not consider it enough so to be prohibitive. He has never injured the uterus himself. He believes, with Doyen's method, that there is little danger of so doing. Denies in toto that there is danger of vaginal hernia. The author reports 14 cases of total hysterectomy with recoveries and healing by first intention. He thinks there are few cases of fibroid tumor to which Doyen's method, or a modification of it, is not applicable.

Contribution to the Conservative Treatment of Women's Diseases.—EISENBERG (*Muench. Medizin. Woch.*, Oct. 7, 1902) inclines to the opinion that vaporization of the uterine mucous membrane has limited the indications for total extirpation of the uterus. In chronic inflammations in the pelvis prolonged hot douches—30 to 40 litres of hot water used for 10-25 minutes in vaginal or rectal douches—reduces the exudate by absorption whether it be extra- or intra-peritoneal. The exudate must not be fresh; the patient must have no acute symptoms, or bad effects result. Leucocyteris is an important point in the diagnosis of a fresh exudate. Post puerperal pus collections give the best results. In perilyphtitic exudates this method can also be employed. In chronic inflammatory processes of the adnexa, provided that there be no collection of fluid in the tubes, this method is also of service, but is dangerous when there is pus present in the tube. Good results follow its use in chronic oophoritis perioophoritis, and salpingitis. In chronic peri- and para-metritis the vaginal douching, together with massage, is good treatment. As many cases are as quickly improved as by operative treatment. Anatomically the woman is not cured, but symptoms are improved.

Photo Therapeutics a New Therapeutical Agent in Obstetrics and Diseases of Women.—PROFESSOR CURATULO (*Brit. Med. Jour.*, Oct. 11, 1902) believes that certain forms of woman's diseases are benefited by this treatment. The effects are obtained by the stimulation of the cells of the part, stimulation of the circulation, and of the nerve supply of the part. Besides this metabolic effect the light has a germicidal action. The light bath is also a hot air bath, and can be used in all cases where the latter is beneficial. For therapeutical use the incandescent electric light is used, divided into its constituent parts. The variety of ray is then used which is most beneficial to the case under treatment. The author describes a speculum specially adapted for this treatment, and describes its use.

NERVOUS AND MENTAL DISEASES.

Dr. Wm. F. Becker, Dr. W. F. Wegge.

On the Typhoid Psychoses.—CLARENCE B. FARRAR concludes from a study of the typhoid psychosis (*Am. Jour. Insanity*, July, 1902) that it is not clinically distinctive, that similar mental disturbances may occur from infection, intoxication, temperature, and anemic conditions, that the severity of the mental malady bears no relation to the severity of the typhoid, that persons with hereditary tendencies to insanity are more prone to develop the post-typhoid psychosis, and that a second or third attack of typhoid is more likely to present the mental symptoms than the first.

As to the form of the mental disorder, the author believes *initial delirium* to be the rarest and the most unfavorable, over 50 per cent. dying, and that this form is essentially toxic, which the Nissl findings confirm. It often causes errors in diagnosis. Any case of mental derangement with fever, the author believes justifies the suspicion of typhoid fever. [He doubtless limits this statement to acute and recent cases, as it is most common to have febrile disturbance in protracted psychoses.]

Another type of mental disorder in typhoid fever is due to the temperature. These purely febrile psychoses are most frequent and afford the best outlook, 25 per cent. of them, however, persist into and past the period of convalescence.

A protracted typhoid fever predisposes to the type of *asthenic* psychosis. This presents a long and weary course with doubtful outlook, and seems to develop on a basis of exhaustion, anæmia, and malnutrition.

A post-typhoid predisposition may exist and there may develop late psychoses with doubtful prognosis.

The author inclines to a graver prognosis of post-typhoid psychoses than is usually held.

Possible Influence of Rational Conversation on the Insane.— The influence of rational conversation on the insane is believed by DR. BUCKLEY (*Am. Jour. Insan.*, January, 1902) to be productive of benefit. He quotes a patient who was "one of the most insane in the house" and was regarded as incurable, who began to improve when special attention was given him in the direction of rational conversation covering his delusion.

Another case was that of a woman who had been conspicuous for her piety, intelligence, refinement, and personal attractiveness. She had lost her son under tragic circumstances and made up her mind that the promises of God were false, that her religious career had been in vain, that there probably was no God, or if there was one, that he was monstrous—in short, a condition of decided melancholia. Representatives of all denominations were invited to call on her, and did so without success in dissipating her delusion, until a certain gentleman, after arguing with her vainly, said, "You say that nothing that I or anyone else or the Bible can say about this will change your feelings?" "I do," she said. "Well, then, Madam," he said, "what are you going to do about it?" He then left the house and she began to think, "What am I going to do about it?" and the more she pondered the more she realized that nothing could be done. Her friends stopped arguing with her and gradually her delusion passed away and she announced one day that having found that she could do nothing about it, she had given it up.

(We know that rational conversation and argument can do much to dissipate sane delusions, why may they not have a like effect upon the insane delusions since these conditions are but relative? Such conversation certainly contributes much to the mitigation of painful delusions. A case occurring in Milwaukee is of interest in this connection. It is that of a woman who had the most systematized delusions of persecution, who was tried before a jury and found insane. She straightway renounced her belief in the persecutions, explaining her changed attitude by the statement that if the jury on such close investigation believed that she "only imagined it" she was willing to believe that too. There was no way of knowing, however, whether or not she had surrendered the false belief. She simply denied it and it seemed no longer in evidence. It may have been concealed or exchanged for another false belief, for it is not likely that the disordered feelings from which the delusion was after all the offspring, the explanation—it is not likely that they disappeared during the trial, although it cannot be denied that the trial may have had the effect of diminishing their intensity.)

Recovery from Tubercular Meningitis.—After briefly reviewing the literature on the subject of the prognosis of tubercular meningitis, GROSS (*Berl. Klin. Wochenschrift*, 1901, No. 44) reports a case of recovery from this disease, occuring in the medical clinic of Quinke.

The patient, a man-servant, aged 17 years, was taken ill suddenly, with severe headache followed on the second day by vomiting. On examination the usual symptoms indicating an intra-cranial inflammatory process were present. The etiology was obscured by an injury to the head received five days prior to the onset of active symptoms. Lumbar puncture was resorted to on the evening of the third day, and a few tubercle bacilli were found in the fluid withdrawn.

This procedure was repeated on the eighth and on the tenth day, but no more tubercle bacilli were found. This corresponds with the experience of Henkel in a similar case. Cessation of fever occurred on the sixteenth day and recovery was rapid. At a subsequent examination involvement of the apices of both lungs, tending to confirm the previous diagnosis of tubercular meningitis, was found.

Recovery from Tubercular Meningitis.—THOMALLA (*Berl. Kl. Wochenschrift*, June 16, 1902) reports a case of recovery from tubercular meningitis in which the diagnosis was confirmed by Gerhardt and von Michel.

In this case, in addition to the cerebral symptoms a few tubercles were found on ophthalmoscopic examination, and caries of the sacrum was present.

The treatment consisted of iodide of potassium and creosote internally, the latter in increasing doses until 4.5 grammes per day were given, and general hygienic measures.

After three months recovery was practically complete. The author believes strongly in the efficiency of creosote in the treatment of tuberculosis, and insists that in order to secure good results it is necessary to give it in large doses.

In order to avoid digestive disturbances he advises giving Extr. Chinae Nanning, in fifteen drop doses, before meals.

Treatment of Sciatica.—BRIEGER (*Berlin Klin. Wochenschr.*, May 5, 1902) lauds the value of the Scotch douche in combination with massage and movements in the treatment of sciatica. The procedure followed by him varies somewhat in different cases, but consists mainly of the Scotch douches with massage twice each week, and hot baths (38°-39° C.) with movements during the intervals.

He reports twenty-four patients treated in this manner, in all of whom, with one exception, either a cure or a very marked improvement followed this line of treatment. The case in which no improvement resulted was complicated with tuberculosis of the left sacro-iliac synchondrosis.

He looks upon this case as presenting evidence of the correctness of the views of Winternitz and his school that in cases in which treatment by means of the Scotch douche fails wholly, a complication is certain to be present. The duration of the treatment varied from thirteen days to eleven weeks.

DISEASES OF EYE, EAR, NOSE, THROAT.

Dr. C. Zimmermann, Dr. G. E. Seaman, Dr. H. B. Hitz.

Albuminuric Retinitis in Syphilis.—DR. C. ZIMMERMANN, Milwaukee, Wis., (*Archives of Ophthalmology*, Vol. XXXI, No. 5, 1902) observed a case of albuminuric retinitis—optic neuritis, numerous hemorrhages, and white patches—in a man, aged 30, whose sight was failing for a few days. V. R. $\frac{50}{50}$ V.L. $\frac{15}{40}$. Urine contained considerable albumen. The man had syphilis five years previously, and drank large quantities of beer. Under energetic mercurial treatment the albuminuria diminished, and V. became normal in about six weeks, with disappearance of the ophthalmoscopic changes, and remained so. He died eight years later from heart trouble, which may also have been of luic nature.

The reasons why this case was diagnosed as albuminuric, and not as syphilitic retinitis are given in extenso, as well as a review of the most recent investigations on syphilis of the kidneys. The latter shows that the syphilitic affections of the kidneys may assume all kinds of changes of these organs we know, including such as notoriously may be complicated by albuminuric retinitis, as granular atrophy, large white kidney, amyloid degeneration. In the opinion of the author there is no reason why these affections, if caused by syphilis, might not give rise to albuminuric retinitis which, so far, has been denied or considered as very exceptional. The treatment of albuminuric retinitis by mercurials has, under all circumstances, been considered as dangerous, but Z. shows by the brilliant result in his case the expediency of specific treatment of albuminuric retinitis in syphilis.

Blennorrhoeic Conjunctivitis Cut Short.—DR. E. PRAUN, Darmstadt, (*Centralblatt für Augenheilkunde*, 1902, p. 270) cites the following case:

At 2 P. M. a child, aged four months, with intense redness of lids, chemosis and profuse suppuration, was brought to him. The affection was said by the mother to have existed only since morning. The microscope showed numerous intracellular gonococci. The conjunctiva was washed with a solution of boric acid and cauterized with a 2 per cent. solution of nitrate of silver, which was repeated at 6 P. M. Then instillations of one drop of a 10 per cent. protargol solution every two hours was ordered. The next morning the suppuration had subsided; conjunctiva still red. The microscopic examination showed no gonococci.

P. assumes that the gonococci transmitted to the conjunctival sac by the fingers, had not yet spread into the deeper layers of the conjunctiva.

Casuistics of Metastatic Ophthalmia.—DR. PURTSCHER of Klagenfurt (*ibidem* p. 257) cites the case of a man, aged 45, had pneumonia of the right upper lobe with typical symptoms. Five days after the crisis burning sensation in right eye, pale chemosis of the upper half of the globe, and watery secretion. Two days later intense edema of upper lid, protrusion of globe about 1 cm. Scanty secretion of tears. Pupil covered by an opaque fibrinous exudation, filling the whole anterior chamber. Pain moderate. Several attempts to evacuate pus from the orbital tissue by incisions failed, until puncture of the sclera freed greenish, somewhat thick, pus from the vitreous, which contained diplococcus lanceolatus in zoogloea masses. The protrusion which had increased to 2 cm. subsided. After a few days profuse suppura-

tion set in through the incisions into the orbit from its depth. It terminated with phthisis bulbi and amaurosis.

The interesting features of this case are that it was observed in the first stage, the combination of purulent ophthalmia with orbital abcess, the zoogloea masses of diplococcus lanceolatus (as far as this may be asserted without cultures) in the pus from the vitreous which is, according to Aenfeld, very exceptional in contrast to the cases caused by staphylococcus and streptococcus. It was accompanied by violent general symptoms as deliria, prostration, and retardation of pulse, which suggested incipient meningitis from purulent colliquation of sinus thrombosis, propagated from thrombosis of the ocular veins. It could not be determined whether the pus, oozing from the depth of the orbit, was the product of a suppurating thrombosis or directly of metastatic nature.

Injury of the Eye by a Bullet; Seat of Bullet Found by Means of Roentgen Photography.—DR. POLLNOW, of Koenigsberg (*Centralblatt f. Augenheilk.*, 1902, p. 194.) A girl, aged 32, attempted suicide by shooting in the right temple with a revolver. P. found at the examination, seventeen days later, at the temple 3 cm. in front of the upper margin of the auricle, a round wound one-half cm. in diameter. The eye protruded, the upper lid could not be raised, the conjunctiva was injected. Pathological convergence from paralysis of right abducens, diplopia. Hemorrhages in vitreous and fundus; a small temporal portion of the retina was detached. V=½. After the extravasation in the orbit was diminished by absorption, a resistant, very painful, ridge could be felt below the external angle of the orbital margin, which, by the Roentgen photograph, was confirmed to be the location of the projectile. The latter was marked by intercrossing horizontal frontal and vertical wire loops.

Operation: Through an incision of the temporal portion of the ocular conjunctiva the probe touched the bullet which was firmly lodged in the orbital wall. It was loosened with the finger and extracted and the wound sutured. Uneventful recovery. The motility of the eyeball was restored. The ophthalmoscope showed white, yellowish, and black pigmented patches as residuals of the hemorrhages and reattachment of the retina. At the place of impact a rupture of the choroid was now visible, with corresponding defect in the visual field. V=½.

Contagious Conjunctivitis.—MYLES STANDISH (*Boston Med. and Surg. Jour.*, October 2, 1902), discusses the several forms of contagious conjunctivitis, with special reference to treatment. He gives statistics of 35 cases of diphtheritic conjunctivitis treated with antitoxin, and details ten of these cases which were treated at the Boston Infirmary, in all of which cultures were taken for the Klebs-Loeffler bacillus, which were positive. The results of antitoxin treatment were exceedingly good.

The author concludes from these statistics: "It will be seen that out of 35 cases there were but three in which the cornea was lost or sufficiently injured to produce absolute blindness, and these three cases were complicated with measles. Of the ten cases treated at the Infirmary there was in no case serious impairment of vision, and seven were discharged with clear corneæ; and of the 25 cases at the South Department of the Boston City Hospital, 15 or 16 had the same fortunate result. Such a report indicates a

great advance from the day when ophthalmologists practically agreed that retention of vision after a diphtheritic conjunctivitis was not to be expected."

Case of Severe Burn of Eye with Nitrite of Amyl.— E. A. SHUMWAY (*Philadelphia Med. Jour.*, October 11, 1902), reports the case of a man—an epileptic—aged 25, who was given nitrite of amyl in quantity with directions to use it as soon as he felt the aura. In May, 1899, the convulsion came suddenly, and he accidentally threw some of the nitrite into his right eye. "There was a deep burn of the cornea and conjunctiva which extended to the skin of the right side of the face. Despite prompt treatment the cornea sloughed and the eye was destroyed." The shrunken eyeball was subsequently enucleated. There seems to have been no doubt as to the nitrite of amyl causing the injury. In explanation of this unexpected effect, the author quotes Schmidt's Lehrbuch, Die Physiologische Chemie: "On long preservation in the light, and with access to air, nitrite of amyl undergoes decomposition, and in consequence of the resulting formation of nitrous and nitric acid it becomes acid in reaction. Valerianic acid, valerianate of amyl and fusel oil are formed at the same time."

The author remarks: "This, then, is the solution of the problem." In a careful search of the literature he is unable to discover a similar case. The following suggestions are made:

"First, nitrite of amyl should be supplied to patients for inhalation only in the form of glass pearls. Second, when in quantity it should be kept in small, well-sealed. glass-stoppered bottles in a cool dark place. Third, a specimen which has been used a number of times should be tested very carefully, and if on examination it is found to have a decidedly acid reaction, it should be at once discarded."

Nasal Surgery.— DR. M. A. GOLDSTEIN (*Laryngoscope*, October, 1902) contributes an article entitled the "Management of Intra-Nasal Surgery," in which he calls attention to the lax methods employed by careless operators, who so often "simply anæsthetize the field of operation without further preliminaries," apply the galvano-cautery point, or clip off a soft "redundant part"—"dust a little antiseptic powder over the surface and dismiss the patient." The consequence is frequent secondary hemorrhage, which, the author says, is one of the "most troublesome and frequent factors in nasal surgery." He advocates tamponing, and prefers a plug saturated with some antiseptic oil, the dry plug, he thinks, being apt to absorb blood and thus become more liable to infection. In this connection he thinks favorably of the Simpson compressed cotton splint. In no case should a splint or tampon remain in the nose more than 48 hours. He also describes several well known methods of plugging the posterior nares after the removal of posterior hypertrophies.

Where hemorrhage occurs, Dr. Goldstein advises careful search for bleeding points, and direct application of the hæmostatic rather than the haphazard method of spraying the nose generally with adrenalin, etc. For the removal of synechiæ he suggests a narrow punch forcep of the "Miles" pattern with subsequent care to prevent recurrence. [No mention is made of the following method of checking hemorrhage after the removal of posterior hypertrophies, which, all considered, is most gererally applicable: first inserting through the nostril into the naso-pharynx a well oiled sterilized cotton plug,

held by a long thread upon which gentle traction is made when plug is well back, and then, while holding the plug firmly in place, firmly packing against it from before backward, with narrow selvage edge gauze.]

Surgical Treatment of Chronic Otorrhoea.—DR. E. B. DENCH, read before the *Am. Laryngological, Rhin., and Otol. Soc.*, at its Eighth Annual Meeting, a comprehensive paper entitled "Various Operative Procedures for the Relief of Chronic Suppurative Otitis Media, and their Comparative Value" (abstracted in *The Journal of Laryng., Rhinol. and Otol.* for October, 1902). Dr. Dench confined his remarks to cases of long standing disease. The cause of all otorhœa was necrosis in the tympanic cavity, the careful and thorough removal of which was essential to cure. When this condition merely involved the ossicles and easily accessible parts the ideal procedure was curettement through the external meatus on account of its simplicity and safety. Statistics showed that when cases operated upon were carefully selected 50 per cent. were cured. He places much emphasis upon careful search being made for the whole or fragments of the incus, this being most frequently the initial seat of intra-tympanic caries. In this operation a hemorrhage is easily controlled by strips of sterile gauze packing, saturated, if necessary, in adrenalin chloride. When intra-tympanic caries is extensive it becomes necessary to expose the tympanum and adjoining cells by the free removal of the osseous walls. The antrum is entered as the initial procedure whenever the radical operation is indicated, not by the Stacke method, but through the cortex. After making one cavity of the antrum and tympanum, the intervening bridge formed by the posterior wall of the canal is removed, the outer two-thirds, even with the floor of the ext. meatus, and the remainder is attacked more cautiously, bearing well in mind the danger of injury to the facial nerve and the semi-circular canal. Having removed all carious bone, to encourage rapid healing an epithelial lining must be formed by flaps from the posterior wall of the fibro-cartilaginous meatus and the concha, the exact form of these flaps varying with each case. As regards the subsequent hearing—the prognosis must be guarded. The simpler operation of ossiculectomy usually results in considerable improvement. The radical operation is less certain in its results, some cases showing marked improvement of hearing—others remaining the same as before—while a few grow perceptibly worse.

NOW IN DOWN-TOWN QUARTERS.

We are pleased to note that The Kremers-Urban Co., Pharmaceutical Chemists and Physicians' Supply House, have removed to more commodious down-town quarters. They have secured the four-story building at 348 East Water street, a few doors south of the Chamber of Commerce, and are occupying it in its entirety, representing about 10,000 feet of floor space. New machinery is being installed—tablet machine, coating pans, distilling apparatus, etc., etc., making their plant one of the finest in the Northwest, and enabling them to take care of large orders better than ever before. The pharmaceutical business growth of this young firm speaks volumes for their products, and method of catering to the medical profession, and representing as they do, the only strictly pharmaceutical laboratory in Milwaukee, the profession and trade extend to them their best wishes for future success and prosperity. Our readers will find the "latch string" out, and a hearty welcome by the genial members of this enterprising firm at all times.—*Adv.*

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A STUDY OF TWO CASES NOURISHED EXCLUSIVELY PER RECTUM, WITH A DETERMINATION OF ABSORPTION, NITROGEN-METABOLISM, AND INTESTINAL PUTREFACTION.*

By DAVID L. EDSALL, M.D., and CASPAR W. MILLER, M.D.

(From the William Pepper Laboratory of Clinical Medicine, Phoebe A. Hearst Foundation.)

Grave gastric hemorrhage, intractable vomiting, and a number of operations provide imperative indications for stopping all food by the mouth. In œsophageal or pyloric obstruction the food taken is often wholly or almost entirely rejected, in which case the same absolute indication is encountered; and even if excessive vomiting does not occur, the amount of food that can be made to pass the obstruction is very frequently so small as to be quite insufficient for the maintenance of a nutritive equilibrium. In a considerable series of other cases of varied kinds it is desirable to limit the food by the mouth to a very low quantity or to substitute entirely other methods of feeding.

In any of these circumstances the only feasible method of supplying nutriment is by way of the rectum. Attempts have been made to administer food hypodermically; but while a very limited degree of success has been attained in this way, it is perfectly evident that such a method has very narrow limitations; and it is one that is exceedingly difficult to carry out, and that cannot be attempted except in case of very pressing need.

The value of rectal alimentation is often very differently stated by writers whose position and experience are such as to make them capable of forming a judgment concerning this question. For example,

* Read before the College of Physicians of Philadelphia, June 4, 1902.

the late William Pepper always spoke of rectal alimentation as being disappointing and unsatisfactory. H. C. Wood's teaching is similar. Ewald admits that the use of nutritive enemata can ordinarily not be successfully carried out for any considerable period of time; but he, nevertheless, considers their nutritive value to be very considerable. Leube, earlier, spoke quite enthusiastically of the nutritive value of these enemata; but the last expression from his clinic, although not from himself personally, refers to the results as being "not particularly brilliant." Riegel speaks highly of nutritive enemata, and leads one to infer that by their use a nutritive equilibrium may be maintained for a long time. Fleiner, on the other hand, insists that it is impossible to maintain a nutritive equilibrium by this means; and that we must always consider, when using exclusive rectal alimentation, that the patient is partially starving.

In general it may be fairly said that the great majority of those who have directly investigated the absorption of nutritive enemata recognize that their value is limited, though different authors vary decidedly in the position that they would accord them. Some clinicians, on the other hand, on the basis of clinical observation alone, praise their use highly, and either state definitely or intimate that they can supply all needs for a long time; while other clinicians who are equally capable take a much more conservative view or even consider them almost valueless.

It must, of course, be granted at once that if any food is absorbed from rectal enemata, an important gain has been made over an entire lack of food. This needs no demonstration. The main question is to determine how much food can be administered and absorbed in this way, and how nearly it is possible to maintain an actual nutritive equilibrium when a patient is being fed exclusively or almost exclusively by the rectum. A recognition of the exact value of this form of alimentation is of much importance, because in many instances the period throughout which this form of feeding is continued must be determined by the general knowledge of its effect upon nutrition; and, frequently, a decision as to the recommendation of operation or as to the period at which an operation should be undertaken will depend upon the same knowledge.

In a communication concerning this subject, one of us[1], several years ago, presented some brief investigations which demonstrated the fact that in the patient then under observation nutritive enemata had been very imperfectly absorbed; and that the amount of nutriment actually received in this way was far less than enough to main-

tain a nutritive equilibrium, even in a patient so greatly reduced as was that woman. Her nitrogen-excretion, also, was such as to indicate that she was practically in a condition of starvation. The present communication will serve as a further contribution to the literature of the same subject, and will, at the same time, direct attention to a factor that has been but casually referred to by previous investigators of this subject, and that should have some influence upon one when reaching conclusions.

The two patients studied were women with gastric ulcer, who were admitted to the University Hospital directly after the occurrence of very grave gastric hemorrhage—one of them in the service of Dr. Alfred Stengel, the other in that of Dr. John H. Musser. In both cases the indication for the exclusion of food by the mouth was imperative. Both were at once put upon three nutritive enemata a day. The total amount given in the twenty-four hours was 400 c. c. of milk and six eggs. In preparing each enema two eggs were added to one-third of the total daily quantity of milk; the whole was predigested with pancreatin; sufficient salt was added to make the percentage equal to normal salt solution, and three drops of laudanum were added to this mixture. In each case a cleansing enema of water was given an hour before the nutritive enema. The latter was always given through a long rectal tube, the patient having the hips elevated, and this position being maintained for an hour or more after the enema was given.

The first patient, H., never had the slightest sign of irritation from the enemata, and had no spontaneous stool during the whole time that the enemata were used. The second patient, N., did not retain the enemata well for the first day (this was five days before the study of her absorption was begun). After this, however, she also exhibited no evidence of irritation, and had no stool, except after the use of the cleansing enemata. It is important to insist upon this point; irritation of the bowel could hardly have played any part in furnishing the results obtained.

Each patient was kept upon exclusive rectal alimentation for eighteen days. In each case our investigations were undertaken only after the patient had been on the rectal alimentation for five days, in order that the results might not be disturbed through the presence in the intestine of food-remnants from a previous period and in order that metabolism might have accustomed itself so far as possible to the unusual conditions.

The nitrogen of the milk was estimated daily; that of the pancreatin tablets was estimated in three samples and the average taken. The eggs were carefully weighed each day, the shells weighed after the eggs were used, and the difference taken as the weight of the egg-albumin and yolk; the nitrogen in the eggs was then calculated from the tables ordinarily given. The fat in the milk was estimated by the Leffmann-Beam process, that of the eggs was taken from tables. The total feces were collected daily, acidulated with sulphuric acid, and evaporated to dryness on the water-bath. The total dry and ground feces of the whole period was thoroughly mixed, and five estimations of the nitrogen and three of the fat were made. The nitrogen was estimated by the Kjeldahl process, and the fat by extraction in the Soxhlet apparatus. In each case the period of investigation was six days.

Case I. Patient H. Nitrogen.

Nitrogen of Urine.

February 1st		11.160
February 2d		10.504
February 3d		10.5624
February 4th		10.856
February 5th		7.147
February 6th		9.9588
Total		60.1882
Nitrogen in eggs	34.7321	
Nitrogen in milk and tablets	13.5396	
Total food nitrogen	48.2717	
Fecal nitrogen	29.0254	
Nitrogen absorbed	18.2463	=39.88%

Total nitrogen absorbed (18.2463 grammes) equals 123.039 grammes protein in six days.

Nitrogen absorbed daily equals 3.041 grammes; this equals 19 grammes protein.

Total fecal nitrogen	29.0254
Total urinary nitrogen	60.1882
Total nitrogen excreted	89.2136
Total nitrogen absorbed	18.2463
Total loss tissue nitrogen	70.9673

Equals loss of tissue protein 443.535.

FAT.

Fat in eggs	167.810	
Fat in milk	117.840	
Total fat in food	285.650	
Total fat in feces	246.770	
Total fat absorbed	38.88	=13.61%

Total fat absorbed per day, 6.48 grammes.

CASE II. PATIENT N. NITROGEN.

February 6th		16.0599
February 7th		15.2105
February 8th		10.2028
February 9th		9.3586
February 10th		13.1022
February 11th		12.7270
Total		76.6610
Nitrogen in eggs	34.0843	
Nitrogen in milk and tablets	14.0307	
Total food nitrogen	48.1150	
Fecal nitrogen	25.261	
Nitrogen absorbed	22.854	=47.5%

Total nitrogen absorbed (22.854 grammes) equals 142.837 grammes protein in six days.

Nitrogen absorbed daily equals 3.809 grammes; this equals 23.816 grammes protein.

Total fecal nitrogen	25.261
Total urinary nitrogen	76.661
Total nitrogen excreted	101.922
Total nitrogen absorbed	22.854
Total loss tissue nitrogen	79.068

Equals loss of tissue protein 494.175.

FAT.

Fat in eggs	164.688	
Fat in milk	120.072	
Total fat in food	284.760	
Total fat in feces	189.50	
Total fat absorbed	95.26	=33.46%

Total fat absorbed per day, 15.87 grammes.

These results correspond fairly well with those obtained in the case previously mentioned; and in these two cases, as well as in the one previously reported, it is quite evident that rectal alimentation was an extremely insufficient method of maintaining nutritive equilibrium, even for a short period. The amounts absorbed in all the cases were far less than the demands of the patients, and the condition of the urinary nitrogen demonstrated that the tissues were suffering largely. The nitrogen in the urine, compared with the nitrogen absorbed, indicates a very marked tissue-loss; and, further, in Case I., as in the case investigated in the previous report, though to a less marked degree, the urinary nitrogen showed the same rapid fall that is exhibited by persons who are actually undergoing starvation.

That the food was insufficient was also clearly shown by the appearance of the patients. The patient of the previous report was, as stated, losing weight and strength so evidently and rapidly that investigation, which was begun late, had been continued only two days when it was considered necessary to give food by the mouth. Of the subjects of this report, only the second patient had her weight recorded before and after the eighteen days of rectal alimentation. During this time she lost forty-two pounds. The weight of the other patient before rectal alimentation was instituted was not known, but it was evident that she was losing weight rapidly. The figures given show that she absorbed less than the other woman, and it is highly probable, therefore, that she lost at least a similar amount of weight.

A fact of decided interest in this connection is that both patients persistently stated that the nutritive enemata greatly relieved their hunger. They said, however, that their hunger was much appeased within a few moments after each enema was administered.. This feeling of relief could, therefore, hardly have been due to anything but suggestion; and a comparison of the patient's own feelings with the figures given for absorption is sufficient to demonstrate the inadequacy of such sensations as a measure of the effect of the alimentation. Some authors insist rather strongly upon the fact that the enemata greatly relieve or entirely do away with any sensation of hunger.

Our figures in three cases, therefore, so far as they are an indication of general conditions, show that, at most, 40 to 50 per cent. of the nitrogenous food and, at most, one-third of the fat is absorbed. These percentage figures, in themselves, do not sound so unsatisfactory. If a fairly large quantity of nitrogenous and fatty food could be given per rectum, the absorption of 50 per cent. and 33 per cent., respectively, of these foods would furnish the patients with a very

considerable amount of nutriment; and if their metabolic demands were already slight from prolonged disease and consequent prolonged subnutrition, it would serve to maintain them in a nutritive equilibrium and, perhaps, cause them to put on tissue. This, however, cannot usually be the case. We are, as a rule, limited strictly to comparatively small quantities of food, because the bowel will not retain more; and if an attempt is made to give larger quantities the percentage of absorption falls, and, indeed, it often becomes impossible to carry out rectal alimentation at all, because the larger quantities frequently cause severe irritation of the bowel.

If the actual caloric value of the food absorbed in our cases be reckoned, it will be found that patient No. 1 absorbed of

	Grammes.	*Calories.*
Fat	38.88	361.5
Proteid	123.039	467.5
Total equalling		829.0

If the total milk-sugar, reckoned high (at 4.5 per cent.), be considered to have been absorbed and be added to this we gain 442.8 calories. The total possible food calories absorbed by this patient in six days would then be 1271.9. The total food calories absorbed per day would under these circumstances equal 211.9. The patient had a moderately excessive amount of body fat, and may be considered as demanding only about 30 calories per kilo to maintain her nutritive equilibrium; she would then need 1800 to 2000 food calories per day.

In the second case the conditions were not quite so bad. The woman absorbed of

	Grammes.	*Calories.*
Fat	95.26	885.9
Proteid	142.8	585.6
Total		1471.5

If the total milk-sugar be considered to have been entirely absorbed in this case, also, and be reckoned as in the other, we add 442.8 calories and get a total of 1914.3 possible food calories absorbed in six days. Her total calories per day would then be 319. This woman was larger and heavier than the other, and her demands, reckoned at 30 calories per kilo, would be 2000 to 2200 calories per day.

The first patient, therefore, received about one-ninth of the amount of food that would be sufficient to maintain her nutritive equilibrium; the second patient, about one-sixth or one-seventh. Even this, however, as we shall show later, is certainly more than either

actually absorbed, owing to the error caused by bacterial decomposition; indeed, it is possible that these amounts are decidedly more than they should be in order to represent the actual absorption. This question will, however, be discussed after referring to the literature.

When our results are compared with the work of others it will be seen that there are notable individual differences, but that, on the whole, the literature indicates that the figures which we obtained for the absorption of protein are not unusually favorable; and there is an almost general agreement that fats are but slightly absorbed, and that their use in rectal enemata provides very little nutrition, and also, probably, tends to interfere with the absorption of other food, since they undergo decomposition and irritate the bowel. The question of the absorption of carbohydrates will be mentioned later. We made no attempt to determine the actual degree of absorption of carbohydrates in our cases, for reasons that will be noted.

First, as to the absorption of albumin. Voit and Bauer,[2] and Eichhorst,[3] the first experimenters in this line, determined that eggs are practically not absorbed by the large intestine of dogs, unless salt be added to them; but that if salt is added, they are fairly well absorbed.

As to the effect upon human beings, the greatest influence in regard to this question has, undoubtedly, been exerted by Ewald[4] through the report that he published in 1887. It has been generally accepted by that author since then, and by numerous writers who have followed him, that eggs injected per rectum are very well absorbed. Ewald's results, given in graphic form, are very difficult to examine carefully, and are very confusing. The figures themselves have, therefore, largely escaped careful observation. It is, however, worth while to give them some attention. His results are, in the first place, those obtained on one patient alone, and that patient certainly showed conditions of absorption that are most unusual; for, if the amount of nitrogen ingested be compared with the quantity given as absorbed, it will be found that the loss of nitrogen in the feces was far below even that which is normal in persons fed by mouth upon readily assimilable food. Indeed, in some of the periods, even when milk in quantities of half a litre was given per rectum (and it is generally recognized that milk, when given by rectum, is ordinarily not well absorbed), the excretion of nitrogen per rectum amounted to as little as 0.11 gramme a day, which is less than is found when absolutely no food is administered; in other words, it is less than the amount

that is customarily due to the secretions of the bowel wall and to the breaking down of intestinal epithelium. Indeed, in almost all of the periods presented the excretion per rectum was abnormally low. The figures obtained in this case, therefore, cannot be properly accepted, as they have often been, as indicative of the general results of the use of rectal enemata.

The chief stress is laid by Ewald upon the condition of the urinary nitrogen and the nitrogen balance in his case; and he directs especial attention to the fact that the urinary nitrogen was largely increased, in many instances, by the use of rectal enemata, and that a negative balance, or a slightly positive one, was transformed into a very marked nitrogen-retention. He himself notes, however, that the conditions varied greatly. In some instances the use of egg-enemata caused only an extremely slight nitrogen-retention, and in others the nitrogen-retention rose as high as 17 grammes. The same was true of "peptone" enemata. The author attributes these results to differences in the assimilability of the food used, rather than to its readiness of absorption. The condition of the nitrogen balance varied, however, to an extreme degree when exactly the same enemata were given in different periods, and it seems rather more probable that a large part of the difference in the nitrogen balance was due either to variations in the metabolic processes not dependent upon the food that was being used, or to a possible technical error. The latter suggestion is made upon the basis of the fact that Ewald himself says that the feces in the different periods varied between 177 and 1844.5 grammes. It is certainly impossible, under such circumstances, to be sure that the feces of one period were properly collected in that period, particularly since no way of separating off the feces was used or could well be used under the circumstances.

The value of the rectal enemata can evidently not be determined, however, by studying the urinary nitrogen. The most important point is to determine the actual absorption; and in this case, as stated, while the absorption was good it was so surprisingly good that the results must be considered to be wholly unusual.

Next to Ewald, the most satisfactory results have been obtained by Huber,[5] who insists from his work on human subjects, as did earlier investigators after animal experiments, that egg-enemata are much better absorbed if salt is added to the egg. Huber investigated three persons throughout a number of three-day or four-day periods, during which enemata of simply emulsified eggs and enemata of eggs and salt, or of peptonized eggs, were given, and these were compared

with other periods during which no enemata were administered. His results varied greatly. In the first case the figures which he gives and which refer exclusively to nitrogen, show, with simply emulsified eggs, only 11.9 per cent. of absorption; with the same in a later period, 17 per cent.; with eggs and salt, as little as 7.1 per cent. of absorption; in a later period of the same enemata, 49.1 per cent. absorbed; with enemata of peptonized eggs, 63.3 per cent. In this last-mentioned period the amount of nitrogen absorbed per day was slightly more than 3.5 grammes—a very considerable amount, although, of course, much less than was necessary to maintain a normal equilibrium.

In his second and third cases the results were much more satisfactory.

Huber's results also are difficult to understand, in the first series particularly, and to some extent in the third. The first patient showed almost constantly a nitrogen-retention; the third patient showed a nitrogen-retention throughout three of the periods; and yet, in spite of this, and in spite of the apparently very marked increase in the absorption of nitrogen when enemata were used, the urinary nitrogen showed practically no change. Under such circumstances the patient would normally almost certainly exhibit a marked increase in the excretion of urinary nitrogen; but this did not occur. The fact that it did not is hard to explain, unless there was a technical error; and, again, evidence of a technical error is, we believe, found by a critical inspection of the figures relating to the feces. In the second case, the daily feces in the period *when no enemata were given* varied in weight from 152 grammes to 611 grammes, and the nitrogen (of these entire periods) varied from 0.55 gramme to 5.21 grammes. In the third case, when enemata were not given, the weight of the feces ranged from 313 grammes to 2044 grammes, and the fecal nitrogen from 2.55 grammes to 12.88 grammes. During these periods, in each case, the food was exactly the same. It is, of course, possible that absorption did vary as largely as this, but even if it did, it makes the value of the investigation doubtful; and it seems to us that a frank acceptance of probabilities must unquestionably lead to the conclusion that the feces were not properly collected in the periods to which they belonged. The different periods were of only three or four days' duration, and when absorption is being studied for such a brief time, with a period of another kind preceding and one following directly after, it is especially essential that some method of marking off the feces

belonging to each period be used. This is impracticable in studying rectal alimentation, and hence a wide range of error must be reckoned with. In Huber's second and third cases particularly, in which absorption and metabolism seemed especially satisfactory, the possible error is so large that it could readily make the figures that he gives indicate directly the contrary of what actually occurred. We grant that the same error was operative in our own work. But it must have been far slighter than in Ewald's or Huber's work, for our subjects had been on the same alimentation for five days before, and no comparison was made with any other periods, while Ewald and Huber kept their subjects on different forms of alimentation only a few days, and included all these days in reckoning results. Any error from this cause that occurred in our work could have been due to only one cause—*i. e.*, retention of feces that should have been expelled during the period of study. In such case absorption was even poorer than our figures indicate.

On the basis of Ewald's and Huber's work there has been rather a general acceptance of the statement that eggs are very readily absorbed from the large bowel. We believe that facts by no means indicate that this is generally the case.

Aldor[6], however, has claimed also that milk, when given in large quantities and when sodium carbonate is added to it, is well absorbed, and constitutes a better enema than any other as yet proposed. It is difficult to understand his reasons for recommending milk so warmly. His actual results were as follows: In the first period the patient whose absorption was investigated absorbed, at most, 38 per cent. of the protein of the milk and 35 per cent. of the fat; while in the second period he absorbed only 12.6 per cent. of the protein and less than 1.5 per cent. of the fat. These figures are scarcely convincing of the value of large milk-enemata.

Other investigators of the subject have not had as satisfactory results with either eggs, milk, or predigested foods.

Czerny and Lautschenberger,[7] investigating a case of colonic fistula, reached the conclusion that only about 6 grammes of protein were absorbed by the large bowel in a day. Markwald found that "peptones" were irritating to the colon, and that the irritation prevented free absorption; and he also found that egg albumin, with or without salt, was but little absorbed. Plantenga[8] is also referred to as having obtained very unsatisfactory results, but his article could not be secured by us. Kobert and Koch[9] found in a patient with a

fistula at the ileocaecal junction that very little of either eggs or "peptones" was absorbed.

Brandenberg[10] investigated the usefulness of nutrose as a rectal aliment, and found that at most about 40 per cent. was absorbed. He also gave enemata of eggs and milk, and found that of 16.5 grammes of nitrogen 10.36 was not absorbed. He reckoned from this that the absorption of eggs was at most about 50 per cent., and of milk still less.

Strauss[11] confirmed Brandenberg's results as regards nutrose. He states that he also administered eucasin per rectum to a patient with oesophageal fistula. His figures could not be given absolutely, because some of the fecal nitrogen might have come from the previous period; but he thinks that at most 40 per cent. of the eucasin-nitrogen was absorbed.

Plantenga,[12] in a second communication, contributes some investigations concerning the effect of somatose injected into the lower bowel of a dog. He found that only 10.8 per cent. to 24.1 per cent. was absorbed in six different investigations.

Finally, however, it may be mentioned that Kohlenberger[13] claims that all of Witte's "peptone" was absorbed when injected per rectum. He bases his statement purely upon the fact that lavage after the administration of albumoses per rectum brought forth nothing that gave the biuret reaction. This method is wholly unsatisfactory, as it entirely overlooks both the influence of bacteria and the possible conversion to amido-acids, etc., by digestive ferments.

As to the fats, the story is a much simpler one. Everyone that has worked on the question of the absorption of fat from the rectum has reached unfavorable conclusions, with the exception of Hamburger, whose work was theoretical rather than practical. Munk and Rosenstein,[14] investigating a case of fistula of the thoracic duct, injected fat per rectum, and found that the increase of fat in the chyle indicated an absorption of only 3.7 to 5.5 per cent. Plantenga[8] is referred to as having had similar results by studying the feces. Strauss[11] found that only about 10 per cent. of fat was absorbed. Aldor[6] found an absorption of 33 per cent. of milk fat in one period; while, with the same patient and the same enemata, in another period soon after the first-mentioned one, he found an absorption of less than 1.5 per cent. Deucher,[15] whose work on this question has been the most extensive of any except that of Hamburger, found that the maximum absorption of fat per day was about 10 grammes, even when circumstances were favorable. The absolute absorption per day

which he found varied only from 4.5 grammes to 9.9 grammes. He thinks that there is little value, if any, in giving the enemata frequently or in administering large amounts.

Directly contrary to these results are those of Hamburger,[16] who, from his experimental work on animals, considers that the large intestine absorbs quite as much fat as the small intestine, provided the fat is administered in proper emulsion. He says that the use of sodium carbonate or of sodium chloride solution in preparing an emulsion is wholly unsatisfactory, because these salts are soon absorbed, and the emulsion is consequently soon destroyed. He found that a solution of soap (*sapo medicatus*) was well adapted to this purpose. The soap was absorbed, and during the absorption was partially changed into fat, but the emulsion was well maintained, and the fat in the soap emulsion was remarkably well absorbed. As stated, however, these results must be considered to be theoretical rather than practical. The work was carried out under purely experimental conditions, and, further, it is questionable whether a soap-enema would be tolerated by the human bowel. Hamburger's method has not been tested with human beings. While it is worth trying, we must for the present consider that fats are absorbed only in very small amounts when administered per rectum, and, in contradiction of his views, it must be remembered that numerous investigators worked with the best of natural emulsions, *i. e.*, milk and eggyolk.

We turn now to a brief consideration of the question of the carbohydrates. Until recently the general opinion has been that sugars are very quickly and freely absorbed from the large bowel; and that starches are slowly transformed into sugars, and in large part absorbed. Strauss,[11] indeed, has gone so far as to say that he has maintained patients in good condition, for one, two, or nearly three months, with enemata consisting very largely of sugar. The great difficulty with the use of sugar, in the experience of most clinicians, has been that it tends to cause marked irritation of the bowel, and soon interferes with the use of enemata. Strauss claims that 40 or 50 grammes of glucose can be used in an enema, and the use of these enemata continued for a month or more without producing, in a large proportion of the cases, any irritation. He seems to stand nearly alone in this view.

The work of investigators on the absorption of carbohydrates has been done almost solely by injecting carbohydrates into the bowel, and determining that little if any sugar or starch is subsequently found in the bowel-movement. It is difficult to understand why such

a method of work has been considered satisfactory, as it is certainly possible for a large portion of the sugar, and even of the starch, to have been broken up by bacteria and to have been passed as products of bacterial action or absorbed as such, and thus to have furnished little or no nutriment to the patient. This fact has recently been strongly insisted upon by Reach,[17] and very important testimony that this probably often does occur was offered by him. He administered various sugars by mouth, and at other times the same amounts and kinds per rectum, and determined their effect upon the respiratory quotient, considering this method to be a direct and positive means of determining whether the carbohydrates used had had any influence upon the actual tissue processes. He noted the usual increase in the respiratory quotient when the carbohydrates were given by the mouth. When administered per rectum he found little or no influence upon the respiratory quotient. He insists that carbohydrates in general are probably but little absorbed as such from the large bowel, and that the previous teaching has been the result of imperfect methods of study.

It was with the same thought in mind that we undertook in our cases a determination of the urinary sulphates for several days during the course of the absorption experiments. The figures obtained were as follows:

CASE I.

February 2d.	Preformed SO_3	1.091
	Conjugate "	0.175
	Ratio 1 to 6.2.	
February 3d.	Preformed SO_3	1.227
	Conjugate "	0.144
	Ratio 1 to 8.5.	
February 4th.	Preformed SO_3	0.806
	Conjugate "	0.162
	Ratio 1 to 4.9.	

CASE II.

February 7th.	Preformed SO_3	1.8838
	Conjugate "	0.4819
	Ratio 1 to 3.9.	
February 8th.	Preformed SO_3	2.0173
	Conjugate "	0.5536
	Ratio 1 to 3.6.	
February 9th.	Preformed SO_3	1.3854
	Conjugate "	0.4197
	Ratio 1 to 3.3.	
February 10th.	Preformed SO_3	1.5549
	Conjugate "	0.6555
	Ratio 1 to 2.3.	

The ratio of the preformed to the conjugate sulphates is of little consequence, particularly when so little food is being absorbed as in these cases. The absolute figures for the conjugate sulphates are, however, important. They show in Case I. about normal values; or, more correctly, if it be remembered that the patient was taking very little food they show that she was excreting a somewhat excessive amount of the conjugate sulphates. Case II., however, was excreting an amount that would be from two to three times the normal, even in a person on a full, ordinary diet. It is, therefore, probable that in Case I. an abnormal amount of putrefaction was taking place in the intestine, and it is certain that in Case II. an exceptionally high degree of putrefaction was present.

These figures are of interest and, we think, of importance if they are compared with the results of the study of absorption in the same cases. Case I., with but moderate evidences of putrefaction, was absorbing badly. Case II., with very active evidences of putrefaction, was absorbing considerably better. These results, particularly when considered in connection with the work of Reach, make it seem highly probable that the putrefactive processes going on in the intestine when rectal alimentation is used are frequently, perhaps always, excessive, and that a certain part of what has previously been considered to be absorption of food is bacterial decomposition of food. As far as the fats are concerned, under such circumstances a very considerable portion might be absorbed as either non-nutritious or actually toxic substances, and another portion, also considerable, might be excreted in the bowel movements in a form which would not appear in the ether extract. The amount of fat found in the feces, as compared with the amount administered, would then be altogether too favorable an indicator of absorption.

In the case of the proteid, since absorption is reckoned from the nitrogen, the influence upon figures obtained for absorption would be comparatively slight. It is possible, however, that the absorption would seem too great in this case also, as some of the nitrogen might, as the result of bacterial decomposition, be passed as ammonia, etc., and thus be lost. This portion is probably of small moment; but, on the other hand, it is wholly probable that a considerable portion of the nitrogen that we have previously recognized as absorbed nutriment has really been absorbed as bacterial products; most of these would be of little or no value in nutrition, and many are to some extent toxic.

If, then, the general results of various investigators be collated,

it will be seen that occasionally, as in Ewald's case and in a portion of the different series described by Huber, absorption of albumins seems to be so satisfactory that a very large percentage of what is administered actually furnishes nutriment; but Ewald's case must be considered an extremely exceptional one, and Huber's work is only partially favorable, and is subject to criticism. The work of other investigators, which is, collectively, decidedly more extensive than that of Ewald and Huber, indicates that egg-albumin, whether given plain or predigested, with or without salt, is, in most instances, not more than half absorbed, and frequently much less than this; that preparations such as somatose, nutrose, and eucasin are still more imperfectly absorbed; and that, as a rule, albumoses (so-called peptones) are irritating to the bowel if given in such quantity as to furnish any considerable amount of nutriment, and are also not usually more satisfactorily absorbed than the other substances mentioned.

As to the fats, there is pretty general agreement with the statement of Deucher that the limit of absorption in one day is about 10 grammes. In exceptional instances, as in one of our cases, decidedly more than this is apparently absorbed. The question of the carbohydrates is as yet unsettled, but Reach's work demonstrates that too much value has been placed upon this class of food, and that it is probable that a large portion of even the comparatively small amounts that can be administered per rectum is not absorbed.

If all these factors be taken into consideration it will be found that under ordinary circumstances the bowel can scarcely be expected to absorb an amount of food in twenty-four hours equal to more than six or seven hundred calories, and that frequently the amount is very decidedly below this. If, further, the factor of bacterial decomposition, which makes the results seem more favorable than they actually are, be considered, it must be recognized that even the amount mentioned is more than is really provided for the tissue needs. Since this is the case, it is perfectly evident that unless circumstances are exceptionally favorable the use of rectal enemata furnishes far less food than is sufficient to maintain the patient in nutritive equilibrium, and that, indeed, in very many instances the patient is, when nourished exclusively per rectum, relatively little removed from a condition of simple starvation.

Granting the correctness of this conclusion, there are certain facts which must be explained. It is frequently stated, on the basis of clinical observation, that patients can be maintained for a short, sometimes for a long, period in a good condition of nutrition upon

exclusive rectal alimentation. The reasons that such statements are made are several: In the first place, in the large majority of cases they are made merely as the result of superficial observation and on the basis of the patient's statement that the enemata relieve hunger. They are often unaccompanied even by the weighing of the patient or by inspection of the amounts passed per rectum; and in such instances they have no real scientific value.

But there is one real factor, that is, as a rule, overlooked. In the article previously mentioned one of us insisted upon this factor as being of much importance, and it is especially emphasized by Strauss as being perhaps the matter of greatest importance in the use of rectal enemata. This is the absorption of water from the enemata. Maintenance of the weight exhibited at the beginning of the use of enemata, and even an increase in weight over a considerable period, may unquestionably, in a good many cases in which rectal enemata are indicated, be due not to the absorption of food, but to the absorption of water. Patients who demand this form of alimentation, as, for instance, those with pyloric or oesophageal obstruction, intractable vomiting, and the like, are now generally recognized to be frequently suffering from lack of fluids quite as much as from lack of food; often even more. In such a case the administration of nutritive enemata or of fluids alone meets one of the most important indications in the case by furnishing fluids to the tissues; this relieves the patient's general symptoms very largely, and not infrequently causes him to put on a considerable amount of weight. In such cases, however, it must be recognized that the improvement is not due to the food, but to the water.

Granting, however, that the results that are considered extremely favorable are at times due to mere superficial observation, and at times to absorption of water rather than of food, it must still be recognized that a number of clinicians whose experience is wide and whose observation is accurate state that they have occasionally maintained patients in fairly good nutritive equilibrium for quite long periods with the exclusive use of rectal enemata. An explanation of such statements must be offered, and an explanation quite in consonance with what we have previously said in this article can be offered if we consider some of the more recent views concerning the variations in the absolute food-demands of the system under varying circumstances. It was taught for years, on the basis of Voit's work, that a normal person at rest—as these cases, of course, practically always are—demands about 1.5 grammes of albumin to each kilo of body-

weight; and at the same time he demands that the total caloric value of his food should be about 40 per kilo, in order that he should not lose tissue. If this were absolutely the case under all circumstances we should necessarily be driven to the conclusion that in studies of the nutritive value of rectal enemata, either the results of investigators must be entirely wrong or the observations of those clinicians who claim that a nutritive balance is sometimes maintained must be wholly inaccurate.

Voit, however, modified his own statement later, and showed that about two-fifths of the amount mentioned was sufficient to maintain a nitrogen equilibrium; and a series of other investigations, among which those of Rubner, Hirschfeld, Klemperer, Kumagawa, and Breisacher are prominent, demonstrated clearly that a tissue loss can be avoided if the caloric value of the food be kept high, when as little as 0.9 gramme to 0.4 gramme of albumin per kilo is being taken. More recently Siven and Albu have shown still more striking results, persons in normal condition maintaining a nutritive balance on an equally small amount of nitrogenous food when the calories were reduced to the normal point or even below the normal. Perhaps the most striking instance in which this has been shown by figures is the case recently reported by Albu.[18]

The person investigated was a female vegetarian, who for six years had lived exclusively upon a diet which had varied little from that which she was taking at the time of the investigation. It then consisted of 225 grammes of carbohydrate, 36.44 grammes of fat, and only 5.46 grammes of nitrogen, the woman weighing 37.5 kilos. The nitrogen-metabolism was determined while this diet was being continued, and it was found that the woman was maintaining a nitrogen balance, and that her weight also remained practically constant. Her nitrogen absorption per day was only 3.30 grammes, which was equal to only 0.56 gramme of albumin per kilo. At the same time her total caloric absorption was but 33.8 per kilo. In spite of this the woman, even while doing moderately taxing intellectual work, maintained a nutritive balance, as was stated.

A striking collective statement of this question appeared recently in an interesting paper by Bernert and Steyskal.[19] The authors direct especial attention to the fact that the minimal food intake consistent with the maintenance of a nutritive equilibrium has generally been placed far too high. They believe that it has been proved that it is possible to reduce the intake to 0.48 gramme of albumin per kilo, and at the same time to have the total caloric value of the food as low as

normal, probably even lower, and yet nutritive equilibrium may be maintained. They, however, emphasize the fact that in order to accomplish this it is usually necessary that the patient should have gradually accustomed himself to a reduction of his food intake. It is certain that if the food is suddenly reduced from a large amount down to a very small amount the patient will, for the time being, be thrown into a condition of practical starvation; if, however, it is gradually reduced he will gradually reduce his metabolic demands, and this can be carried down to a strikingly low point.

This is a brief explanation of the fact that patients may occasionally be maintained at a nutritive equilibrium with the use of rectal enemata, even though rectal enemata, at best and even if entirely absorbed, cannot provide a normal amount of food. The fact that man can reduce his absolute demands to so low a point would at first seem to indicate that we have been wrong in insisting that there is but a limited value in the use of rectal enemata. It does demonstrate that they have importance, for if a patient can be maintained in nutritive equilibrium, even though the point at which equilibrium is reached has been brought far below the normal by prolonged sub-nutrition, a very decided gain over any condition in which there is tissue loss has been made. It should, however, be very definitely realized, on the other hand, that a mere maintenance of equilibrium at the minimal point, or at a point approaching the minimum, is far from being an ideal condition, and is really only a makeshift. The reduction of food to the lowest point consistent with the maintenance of an equilibrium means that the patient is being put into a condition of subnutrition; and the mere fact that he does not lose weight under such circumstances does not by any means indicate that he is being normally nourished. Even though we have learned that a balance can be maintained on far less food than Voit's figures indicated, we must at the same time hold to the fact that his figures do indicate the amount that a normal person, living normally, takes. Hence, while a reduction of the quantity of food very considerably below this point, if gradually undertaken, may be consistent with the maintenance of a constant weight and of apparently fairly good health, such reduction must always be considered to mean a condition of subnutrition, and the more marked the reduction the more severe the subnutrition.

When this view is applied to the question of the use of rectal enemata we must realize that even if the utmost limit of success with rectal enemata be attained and the patient be kept from losing weight,

we are at best not nourishing him properly. If as much success as this be obtained, and it is in the case at hand merely a question of inability to take food by the mouth for a limited period, it is, of course, proper to continue rectal alimentation as long as needed. We believe, however, that such a degree of success is but rarely attained. If, on the other hand, it is a question of attempting to maintain a patient's nutrition and to improve it, in preparation for operation, in such cases as pyloric and oesophageal obstruction, it is perfectly evident that the limits of success are very narrow; in practically all cases it is impossible to improve nutrition in this way to any notable extent, and the chances are large that the patient will lose decidedly rather than gain. If we hope to do any good by operative procedures we should not delay long with rectal alimentation, but should intervene as soon as practicable. In other cases in which food by the mouth is withheld because of the danger of hemorrhage, etc., we must realize that the patient is usually being partially starved, and if a critical occasion arises we must consider well the relative importance of partial starvation and of the dangers associated with the administration of food.

In conclusion we would say, briefly:

Rectal alimentation in exceptional cases provides enough food to the tissues to prevent tissue loss. Even in such favorable cases the best that can be done is to keep the patient from losing ground when he is already in a condition of decided subnutrition.

Usually food administered per rectum is very imperfectly absorbed, and consequently rectal enemata, as a rule, supply only a very small part of the amount of food necessary in order to maintain a nutritive equilibrium.

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SOME GASTRIC DISORDERS IN OLD AGE*.

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Diseases of children, presenting many features of a special character, have been studied with minute care and attention and have been so classified as to erect into a specialty this department of medicine. It is quite otherwise with diseases occurring at the other extremity of life, which undoubtedly present features as special to the period as do those of childhood. While all medical schools devote considerable time to teaching the diseases of infancy and childhood and employ a number of professors and teachers in this department, I am not acquainted with a single one that affords instruction in the diseases of old age. Special teaching in this department must sooner or later be established, for neither the anatomy nor the physiology of the aged is the same as that of the adult or child, but a gradual alteration in tissues and functions is to be observed from the cradle to the most extreme old age.

Much speculation has been indulged in, from Herbert Spencer to Boy-Teissier, to account for the fact that old age occurs at all, but that "a man is as old as his arteries" has come to be a common expression, though its full import and meaning may not be duly appreciated and understood. The individual is the result of his ancestral inheritance and his environment, and as these differ widely, so do

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individuals differ widely, some developing all the evidences of senility at the age of 40 years and others remaining vigorous at 70.

During infancy and childhood the heart is comparatively small and the arteries short and of large calibre, the consequence being that the blood pressure is low, the heart's action rapid, and the tissues are bathed in a superabundant flow of nutrient fluid which makes its circuit in a trifle more than half the time occupied in adult life. Metabolism is, therefore, active. With growth and development the arteries elongate out of proportion to their increase in calibre and growth of the heart, and as a result the blood pressure rises and the heart's action is slowed. This condition is maintained throughout adult life and until "old age makes his first call." At this time the elasticity of the arterial walls becomes lessened and there is a fall in arterial pressure, the consequence of which is that the pressure in the capillary system falls and the hitherto continuous flow of blood through these vessels becomes actually or approximately intermittent. The natural consequence of this circumstance might be inferred from the fact that the capillary capacity is about 800 times greater than the capacity of the arterial system, and the velocity of the blood current is only about 1/60 that of the blood in the aorta.

Capillary vessels, therefore, obsolesce in areas widely distributed throughout the body, and as a result widespread atrophic processes arise, not only in the muscular system but also in the parenchymatous organs in general.

There are, in fact, but two organs exempt from the operation of this process, namely, the brain and heart, which latter organ does not reach its maximum size until the 8th decade of life, the brain owing its immunity from decay to the fact that the internal carotid arteries do not lose their elasticity except as a result of disease. We, hence, witness frequent examples of brilliant brain work in extreme old age.

Nature, in her prodigality, has so highly endowed most of the organs of the animal economy that they resist long continued, persistent and outrageous abuse. This is probably true of the stomach in a higher degree than with respect to any other organ of the body, and this is no doubt due to the fact that in the evolution of the human animal the digestive organs were early differentiated. During the adult life of the individual, however, and particularly as old age approaches and is developed, the anatomic changes which arise render digestion more and more difficult, and therefore the stomach

becomes less resistent and more likely to suffer from gastronomic influences.

Singularly enough, as old age becomes established, the subject becomes less and less able to act upon the advice of others, continually talking about his "experience" which has taught him "thus and so." The anatomic changes incident to advancing years which render all the functions of the body imperfect in their performance, together with the habits of maturity carried into old age, are very potent factors in the causation of gastric disturbances. As a consequence of obsolescing capillary areas, the digestive organs undergo atrophy so that they present extensive alterations in their gross and microscopic anatomy. The whole digestive tract becomes attenuated and thinned, its mucous membrane atrophied, and its muscular fibers lessened in number and in size. This wasting of tissue is so extensive that at post-mortem examinations of the aged we are often able to observe the intestinal contents through the thinned walls.

We have here a combination of anatomic conditions which sufficiently explains the great frequency of gastro-intestinal disturbances in the aged. These disturbances vary in different subjects, in some amounting to merely slow digestion, in others to gastric catarrh, and in still others to gastrectasis. It has seemed to me, from the comparatively limited experience I have had with gastro-intestinal disturbances in the aged, that the element of dilatation is one that is more commonly present than is generally supposed. The stomach walls are thinned, its mucous membrane atrophied as are also its peptic glands, and the patients eat without any regard to manner, amount or digestibility of food. The result is that digestion is slow, irritating gases are evolved; and dilatation follows, and the conditions are such that the trouble tends to become worse and worse rather than the contrary.

An examination of the gastric contents has shown an absence of free hydrochloric acid in the stomach in many of my senile patients an hour after a test meal, indicating that atrophy of the gastric tubules has taken place, involving absence of those parietal cells whose function it is to secrete hydrochloric acid.

The absence of free hydrochloric acid from the gastric juice renders bacterial fermentation more likely to take place, the acid being a potent germicide. Such fermentation results in the evolution of gases which tend to cause dilatation.

During early and middle life accumulations of gas do not tend very strongly to produce dilatation for the reason that the muscular

walls of the stomach are normal in strength and structure and the dilating force is intermittent. In old age, however, when retrogressive changes have taken place, even intermittent pressure of gas in the stomach strongly tends to cause dilatation. Earlier in life such dilatation may occur in anaemic, debilitated or neurasthenic subjects.

The influence of age upon the dilatation of hollow organs is well illustrated in the case of obstructed flow from the urinary bladder. In the young man suffering from urethral stricture the bladder walls undergo hypertrophy with little or no dilatation, whereas in the old man an enlarged prostate uniformly causes dilatation.

Lessened nervous energy no doubt plays an important rôle in the etiology of dilatation in old age, as it certainly does in earlier life in the neurasthenic.

The following cases are described merely by way of illustrating a class of gastric disturbances that must be more or less common in the practice of most physicians:

Case I.—Carl W., aged 64 years, by occupation a tailor. This patient first came under observation in the winter of 1899. His family and personal history were negative. He had always been a moderate beer drinker, taking on an average about 1 pint daily, and had never had any venereal disease or other infection. He stated that for a number of years he had suffered more or less from dyspepsia, but more particularly for the past year or two. There had been a loss of about 25 pounds in weight. He complained of a sensation of weight and oppression in the epigastric region, radiating to other abdominal regions, and occurring every day, often continuing throughout the day, and frequently amounting to gastralgia. His appetite was poor and capricious, bowels constipated, and there were occasional, rather frequent, attacks of headache and vertigo, gaseous eructations, nausea and infrequent vomiting. This man presented an anaemic appearance and looked older than the age given. On palpation nothing abnormal was discovered except epigastric tenderness. The percussion note was tympanitic over a large area.

Blood examination showed erythrocytes 3,700,000, leucocytes 9,000, haemoglobin 70 per cent. The urine was free from indican, albumin, sugar and tube casts, but contained acetone in a marked degree. One hour after an Ewald test meal the stomach contained neither free hydrochloric acid nor lactic acid. Remnants of an ordinary meal were found in the stomach seven hours thereafter.

The diagnosis reached was chronic gastric catarrh with atrophy involving the mucosa, muscularis and gastric tubules with resulting gastrectasis, and simple anaemia. The treatment in this case was: creosote three minims and strychnine 1/30 grain with each meal, a pill of aloin, belladonna and strychnine at bed time, and ten minims

of dilute hydrochloric acid half an hour, and another dose one hour after each meal. Directions were also given as to manner of eating, which will be discussed a little later.

Case II.—Mrs. M. G., aged 61 years, housewife. This woman came under observation in the summer of 1900. Her family history is negative. She had never suffered any acute disease, but had had an attack of subacute rheumatism about 3 years before. She stated that she had suffered more or less with "stomach trouble" for the past 20 years. This trouble consisted of more or less frequent attacks of indigestion, the chief symptoms of which were a feeling of weight and oppression in the epigastric region after meals, eructations of gas, and sometimes nausea.

During the year before she came under my observation her suffering had been greatly increased. She complained of much pain of a dull character, almost constant and not much influenced by eating, of gaseous eructations, and much nausea with occasional vomiting, that is, once or twice a month. Her appetite was capricious and her bowels were constipated, and she further stated that she had fallen off some in weight. Her appearance was decidedly anaemic if not cachectic, strongly suggesting the possibility of a malignant disease of the stomach. On examination, palpation elicited tenderness over the epigastric region as well as, to a lesser degree, over the rest of the abdomen. No tumor or other abnormality was discovered. On percussion a tympanitic note was produced as high as the sixth rib and after inflation to about one inch above the umbilicus. Remnants of an ordinary meal were found in the stomach seven hours thereafter. Examination of the stomach contents after an Ewald test meal showed complete absence of free hydrochloric acid, also absence of lactic acid. The blood examination showed erythrocytes 3,500,000, leucocytes 10,000, haemoglobin 65 per cent. The urine was free from excess of indican and contained no albumin, sugar or tube casts, but acetone was present in a marked degree.

The diagnosis was, therefore, made of chronic gastric catarrh with atrophy of the mucosa together with muscular atony and dilatation, and consequent simple anaemia. The treatment adopted in this case was the same as in the preceding one.

Case III.—Mrs. M., aged 58 years. This patient came under observation in the fall of 1901. Her family and personal history are negative. She gave a history of having suffered for several months from "dyspepsia," complaining of epigastric pain and distension, capricious appetite, habitual constipation, nausea, occasional vomiting, vertigo, and frequent headaches. Her physical appearance was good, not anaemic, although she looked older than the age given. Free hydrochloric acid was found in the stomach after a test meal, but no lactic acid. No blood examination was made in this case. The urine was habitually free from albumin, sugar and tube casts, but every specimen examined contained acetone in considerable amounts. Abdominal palpation was negative; no distension, no tenderness, no tu-

mors. Remnants of an ordinary meal were found in the stomach seven hours after. The diagnosis in this case was gastric atony and dilatation. The treatment adopted in this case was the same as in the two preceding ones except that no hydrochloric acid was given.

It has been argued that the loss of the teeth in old age is a fact indicating that the diet in advanced life should be the same as it is in infancy, that in the second childhood milk should be the main article of food. While this argument might have held good in the past it cannot be said to be very weighty at this time, for our dental brothers have made it possible to preserve the function of mastication to the utmost limit of life. The diet of the aged should not, therefore, differ from that of middle life, the main and most important consideration being that the food should be thoroughly masticated and insalivated. This is particularly important in view of the lessened motor power of the stomach and the consequent possibility that the digestion be so delayed that fermentation may ensue. It is always desirable that old people should eat oftener and in smaller amounts than the young. This lessens the danger of overloading a weak stomach and one deficient in capacity for secreting the normal digestive ferments and acids. It is not desirable to restrict diet as to articles, but on the contrary it is highly desirable that the diet should be as varied as possible, for, in consequence of atrophy of the intestinal canal and its lessened innervation, constipation is an extremely common and obstinate condition and one that demands our attention in most cases of digestive disorders in the aged. A liberal diet, tending as it does to secure regularity in the action of the bowels, is therefore advantageous.

By liberal diet it is not intended to convey the idea that the diet should be what might be called "liberal" in amount, but liberal in variety. The danger of overfeeding in old age is as great as the danger of underfeeding in childhood, and the fact that an abstemious diet is conducive to longevity has been generally recognized, at least, since *Cornaro* wrote in 1727. *Cornaro* himself lived to the ripe age of 100 years, his daily allowance during his senility amounting to 12 ounces of solid food. *Thonas Parr* reached the age of 152 years on a similarly abstemious diet, and then died of acute indigestion resulting from overindulgence at a banquet given in his honor. The old man does not require a diet, in amount, in excess of that which is sufficient to maintain an equilibrium, and this is comparatively small, inasmuch as the waste is small.

In view of the fact that, as recent experiments tend strongly to

show, very little, if any, fluid is absorbed from the stomach, a dry diet is highly desirable. This not only lessens the tendency to gastric distension, but also facilitates digestion by lessening the dilution of the gastric juice. In recent and mild cases these means, together with attention to the action of the bowels, will often alone suffice. In the majority of cases, however, drug medication will be found necessary, and there are a few considerations of a pharmacologic character in this connection to which I wish to invite your attention.

I have found upon examining the stomach contents after a test meal, in a considerable number of senile cases, a total absence of free hydrochloric acid. This fact is illustrated in two of the cases just related. In the natural course of events this is what might be expected, for in the obsolescence of capillary areas the gastric mucosa does not escape the ravages of time. Undoubtedly the parietal cells of the gastric tubules, in a considerable proportion of cases, undergo atrophy and disappear, thus lessening the amount of hydrochloric acid secreted, or causing its total absence in the gastric juice. The stomach tube and Guenzburg's test afford a ready means of determining the presence or absence of free hydrochloric acid, and the procedure is simple and the test easily applied, and moreover it is very delicate.

Cases of digestive trouble extending over long periods and having resisted treatment for years, have improved in, what appeared to the patient to be, almost a miraculous manner when hydrochloric acid was administered after meals. This fact was illustrated in case II, the woman having been under treatment for many months without benefit, until the examination of the stomach contents was made and hydrochloric acid added to the treatment already instituted. Improvement was immediate and has continued now for nearly a year. Case 1 also illustrated the same fact and in the same manner.

In consequence of the delayed digestion, bacterial growth in the stomach contents is favored. It is, therefore, important to obviate this so far as is possible by the exhibition of antiseptics. It is, of course, not possible to entirely destroy bacteria in the stomach, but if their growth can be inhibited to a certain extent so as to enable digestion to go on to completion before any decided fermentation takes place, some good will have been accomplished. For this purpose a number of substances suggest themselves to us, but on the whole creosote is probably as eligible as any, and certainly is as effectual, in doses that can be tolerated by the average patient. Beginning with two drops for a dose the amount can be gradually increased to five or six, and need not exceed this limit.

Should it become necessary to abandon the drug on account of its irritating effects or because of impairment of appetite, we shall find that there are other drugs at our command, naphthaline, iodoform, salicylic acid, listerine, thymol and hydrochloric acid. There are objections to most of these drugs which will occur to all, the least objectionable and therefore the most useful are undoubtedly hydrochloric acid, listerine and thymol. The hydrochloric acid ought to be given in several doses following each meal in order that the effect may be kept up. Thymol may be given in capsule or wafer and listerine may be given in teaspoonful doses. These drugs have the advantage of being neither disagreeable to take nor irritating to the stomach.

We have seen that there is lessened motor power in both stomach and intestines in the aged, in consequence of atrophy of the muscular walls thereof. Defective motility is, however, not alone due to this atrophy, but is in a measure also to be ascribed to defective innervation. We must, therefore, endeavor to increase muscular activity and improve the nutrition and hence the functional efficiency of the sympathetic nervous system. For this purpose there is probably no drug comparable with strychnia which possesses the additional merit of increasing the amount and improving the quality of the gastric juice, through its stimulating effect upon the nerve supply of the stomach.

The beneficial effects of strychnia are not limited to stimulation of the muscular coats of the stomach, but extend to those of the intestines, thereby increasing peristalsis and tending to relieve constipation which is almost invariably present in the class of cases under consideration. The constipation, however, will generally be found to be of too long standing and too obstinate character to be relieved in any marked degree by strychnia alone, and we shall hence be compelled to resort to something more effective.

For the treatment of this condition a great number of laxatives are available, but on the whole aloin appears to me to be the most suitable, unless it may be cascara sagrada. The constipation being chiefly due to atrophic changes together with atony, drugs of this class which act more particularly on the intestinal muscularis and nerves are to be selected rather than those producing catharsis in a different manner.

THE USE OF THE WET DRESSING IN SURGERY.

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It would seem to be unnecessary to write again concerning this or that form of dressing but for the fact that daily observation shows that the profession in general has not yet learned the lesson of simplicity in surgery.

Our practice has not kept pace with our preaching. Many still cling to the use of carbolic acid and bichloride of mercury in strong solutions, when experience of laboratory and clinic room has taught that blander antiseptics in much less concentrated solutions, and even salt solution should replace them.

The treatment of infected wounds has passed through various evolutionary stages. At one time strong antiseptic solutions were used to irrigate such wounds, and gauze strongly impregnated with the same drugs to absorb the secretions. As cases of severe poisoning occurred, sometimes only local in the form of a severe dermatitis or gangrene, at other times of a general nature even causing death, we passed to simpler methods.

At the same time a more careful study was made of the nature of infection. It was found that if the chief principles were kept in mind our task was a far easier one.

These were: 1st. That our incisions in cases of infection should be large and deep enough to drain every corner of the infected territory. Operate in a bloodless field if possible.

2d. That our drainage material, be it gauze, rubber tissue or tubing, should not be allowed to become inert. Use must be made of the principle of capillarity so that the serum and tissues—as rapidly as they form pus—are carried away to the dressings.

3d. That the parts should be kept elevated and at perfect rest (if necessary by the use of splints) in order to prevent the organisms from being rubbed into the lymph channels mechanically.

4th. That nature's eliminators of organisms, the liver, intestines and kidneys, must be kept in the most favorable condition to perform their function.

It is the intention of the present paper to deal especially with the second of the above principles. Its elaboration, however, is so closely related to the others that a brief reference will be unavoidable.

We should not be content with making a single small incision in a case of infection, then putting on a dry dressing, without even packing the wound to provide for drainage. The rule should be to incise early and not too sparingly. We should not only expose the infected area itself so that every part of it can be drained, but should also relieve the tension of the surrounding tissues by making many counter-incisions, even though they be only through the skin itself, to permit the escape of the excess of serum which is always present around such an area, and greatly favors the spread of infection. It is far better surgery to secure a large incision when the wound is granulating after an infection has been overcome, than to be obliged to amputate or to discharge a patient with a deformed finger or limb. Any one who undertakes the treatment of a case of infection must have a clear notion of the surgical anatomy of the region in order to treat it intelligently. In the fingers, for example, we should understand the ease with which infection travels toward the bone, and in cases of felon incise down to and even through the periosteum, in order to prevent necrosis. Those who have operated upon cases of infection when blood is continually flowing over the field of operation, and then again in a bloodless field, will appreciate the great advantages of the latter. This can be accomplished best when a local anesthetic is given, by the application of an Esmarch constrictor well above the point of infection. When the infection is confined to a finger, the base of the same can be constricted by a soft-rubber catheter. Ethyl-chlorid and similar freezing mixtures render the parts so hard to cut through that their use should be limited to cases in which a single small incision suffices. Retractors will be found of great assistance, both at the time of operation and in the dressing of the wound. By holding the skin and superficial tissues back, there will be far less pain when gauze is packed into the wound than otherwise, and this can be done far more satisfactorily than working in the dark. If possible, it is best to administer a general anesthetic. It will be found far better for the careful exploration of an infected wound.

Henle, Schimmelbusch, Reichel, and others have shown that irrigation or cauterization with strong antiseptics, and curettage, are of little avail in rendering an infected wound aseptic. In fact, they may do great harm by breaking down the barrier which nature is attempting to throw around the infected zone. In general, strong antiseptics, unless they are neutralized, destroy in a great measure the bactericidal action of the tissues themselves, which we have come to regard as a most important element in the defense against infection.

We should provide for ample drainage in every case of infection, no matter how slight it may appear. Gauze, wide-meshed, either plain sterilized or borated, is the ideal material for this purpose, especially when combined with a moist dressing. Some prefer drainage tubing, but my own experience with gauze, in the mildest as well as in the most severe cases, certainly justifies my continuing to use it.

Friedreich has called attention to the fact that pressure and counterpressure play a great rôle in the absorption of micro-organisms. A wound in a tissue causes a decrease in pressure, thus allowing its fluids to escape. When a tissue is infected, the fluids are greatly increased, and if they accumulate in the wound, its tension is raised, and micro-organisms and their toxins are more rapidly absorbed and find their way more readily along lymph spaces. We should, therefore, always provide amply for drainage, packing gauze into every portion of the wound, not too tightly, however. When there is no accumulation of secretions, micro-organisms develop poorly. Personally, I have made it my rule to pack every infected wound, no matter how small the area.

When antiseptics were first introduced in infected wounds, the tendency was to employ them in as strong a solution as possible. It was soon seen that they did great harm, gangrene from carbolic acid and toxic effects from this drug, as well as from bichlorid, being frequently observed. At the present day, the tendency is to use the weakest solution of bichlorid, 1 to 10,000, and we are gradually dispensing with its use altogether, the majority of surgeons employing milder antiseptics like aluminum acetate, salicylic or boric acids. It has frequently been shown by Haenel, von Eicken, Bardenheuer, Helferich, and others, that it is absolutely immaterial which one of these milder solutions is employed so long as we pay attention to the cardinal principles, namely, to employ them in the form of a moist dressing after ample incisions have been made and good drainage provided. A Russian surgeon for one year treated all of his cases of infection (1,500), with salt solution, with results equal to—if not better than—those which he obtained by strong antiseptic solutions. During a dispensary and hospital experience of 10 years I have used a 1 to 1,000 salicylic solution in every case (about 2,000) with very satisfactory results.

We now come to that principle which forms the title of this paper. Sterilized gauze, wide meshed, saturated with the milder antiseptic solutions just mentioned forms an ideal dressing for constant absorption of secretions.

The gauze should be sterilized in the ordinary manner and not impregnated with any antiseptic previous to its use. It must then be dipped in hot solutions and applied over the infected parts. I prefer to shake it out so that it does not lie in folds. This favors absorption by exposing a larger area of the gauze. The formula of the salicylic acid solution which the writer employs is as given originally by Dr. J. Wm. White.

℞ Acidi Salicylici gr. 32
Alcoholis q. s. ad. oz. 4
M. et Sig.,
Teaspoonful to one-half glassful of hot water.

This can be safely employed every half hour by the patient so that constant absorption can take place from the wound. In cases extending over a considerable area or in elderly persons, especially on the legs, a hot saturated boracic solution suffices. As stated above even salt solution accomplishes the same purpose.

When a wound has been thoroughly drained in every part, and evaporation of the moisture in the dressings prevented by covering the latter with gutta percha tissue or oiled silk, the action may be compared to that of a lamp. The gauze drain is the wick which by capillary action draws up the infected wound secretions and carries them to the moist dressing. Here they are distributed and thus a continuous suction action from the tissues to the periphery of the dressings takes place. The tissues have two allies in their battle against micro-organisms, the germicidal properties of the blood serum and the phagocytic action of the tissue cells. If the infected secretions are left stagnant in the wounds, the organisms have the advantage over these allies and the infection spreads. Our wet dressings—by drawing them away—give the parts an opportunity to form a barrier of granulation tissue and to kill the organisms, and clinically the infection ceases to advance.

A wet dressing without ample provision for drainage is almost useless. It must be changed frequently, at first, 2 or 3 times daily in severe cases, once daily in less severe cases, and later on every second day. A dry dressing should be only employed when, after an operation, the bleeding is profuse and parenchymatous, and then only as a temporary dressing; after 6 to 12 hours it should be taken off and a wet dressing applied. The bland antiseptic solutions have the chief advantage of not causing any tissue necrosis or general toxic effects. They thus aid the body in its fight against the organisms. When the wound is to be dressed and the edges are retracted, it should

be irrigated with some one of the milder solutions just named, or with hydrogen dioxid, and then repacked. It is not necessary to state that the use of flaxseed poultices in the treatment of an infection should be most severely condemned. The use of dusting powders is superfluous; their antiseptic action is slight and they are often used so freely that they block the channel for the escape of the secretion. One of the best to employ at the time when granulation has begun is the Thiersch powder—one part of salicylic acid to 16 parts of boric acid. Some of them, like iodoform and similar iodin compounds, not infrequently irritate the skin in the neighborhood of the wound, causing a violent dermatitis, which greatly complicates the healing and gives new atria for infection,

Placing the infected area absolutely at rest in an elevated position is to be strongly urged. Bier has shown that passive hyperemia favors the development of micro-organisms. If an infected part is allowed to hang so that it is filled with venous blood, we paralyze the activity of the tissues. If the infection be extensive, the patient should be put to bed with the arm or leg elevated on a von Volkmann splint.

In order to decrease the deformities resulting from infection as much as possible, we should attempt secondary suture of granulating wounds. Active and passive motion should be commenced as soon after the wound has healed as possible. For this purpose we have many mechanical aids, such as the various forms of pendulum apparatus, the Zander machines, and the ordinary pulley weights.

The writer has found wet dressings of great value also in the primary treatment of accidental wounds, for example those resulting from railroad, street car or factory accidents.

In these cases there are usually extensive superficial abrâsions which almost invariably suppurate profusely and require weeks and even months to heal. One can get far better results by a thorough disinfection of the surface, for example the face or scalp, when first seen, and then applying a wet dressing of weak salicylic (1-1,000) or boric acid solution. The principle is the same as in infected wounds. The area remains clean, the secretions are rapidly absorbed, and epidermization occurs much earlier, saving the patients weeks of valuable time. To recapitulate:

(1) Strong antiseptics are to be replaced by the milder ones, both in dressings and solutions.

(2) Ample incisions and counter openings to permit free escape of secretions. The use of the principle of capillarity in the constant removal of infected liquids.

(3) Keep the parts at rest, and the kidneys, liver and intestines in a good eliminatory condition.

(4) Operate under general anesthesia and in a bloodless field.

(5) The use of wet dressings is the most logical treatment in infected and accidental wounds. They must be saturated with mildest solutions and frequently changed.

SMALL POX AND THE PRESENT EPIDEMIC IN MILWAUKEE. *

By W. C. BENNETT, B.S., M.D.

REGISTRAR OF VITAL STATISTICS, MILWAUKEE.

The present epidemic of smallpox is so universal in its geographical distribution, so mild, generally speaking, in its character, and so at variance with the type which formerly obtained that the reasons for these peculiarities must be sought by every one interested in the subject.

Practically every country now has smallpox cases, and in our country nearly every state in the union reports a few or many cases. One of the causes of this widespread infection is undoubtedly the mild character of the disease, which easily admits of its concealment or even masks it from recognition. We have found many cases that were not attended by physicians, and while the members of the families in which these cases existed must have had at least a suspicion of the true nature of the disease, the sickness was so mild that the patients were not considered in any great danger, and rather than go to the hospital, which many still think of as a "pest house," they were kept concealed until entirely recovered. It is fortunate that along with a mildness of type there is a proportionate decrease in the infectiousness of the disease: the mildness of the type increases the likelihood of exposure, and the danger to susceptible individuals is therefore apparent.

A second cause for the existence of the epidemic lies in the fact that there are so many unvaccinated persons. The fact that prac-

* Read before The Milwaukee Medical Society, Dec. 9, 1902.

tically all cases occur in unvaccinated people should be convincing proof to even the obdurate that the present epidemic *is smallpox,* and also that vaccination protects, and it might be well to digress a little at this time to declare there is nothing else known that will protect a community against smallpox. It is only fair to quote the experience of Cleveland, Ohio, which, if it were not a serious matter, would be ludicrous. The Commissioner of Health in his annual report for 1901 says, "In our fight with smallpox we suspended vaccination on account of the impurity and inertness of the virus. Instead of it we resorted to wholesale house to house disinfection with formaldehyde. The effect of it has been marvelous and has drawn the eyes of the whole union towards Cleveland. No doubt the object lesson which we have taught here will result in a great good to the whole nation. Smallpox has been extirpated in a relatively short time. The same thing could be done with other diseases, as typhoid fever, scarlet fever and diphtheria." During that year there were 1,232 cases and 20 deaths from smallpox.

From the monthly reports of the Commissioner of Health of Cleveland we find that from April 1, 1902, to Nov. 1, 1902, there have been 191 deaths from smallpox in that city, which indicates either nearly 12,000 cases or a higher death rate. That is an object lesson with a vengeance.

The excuse given for not vaccinating in the city of Cleveland was that they were unable to obtain a pure, active virus. Their efforts in that direction must have been very feeble indeed. As a result of 25,000 or more vaccinations made by our health department in the past two years, we have obtained typical vaccinations in about 93 per cent. of primary cases and 57 per cent. of secondary cases. The bad arms which result in some cases have, I believe, invariably been found to be due to a subsequent infection, and this is not to be wondered at, when the surroundings and conditions in which some of these people live are taken into consideration.

It is not improbable that faulty technic, inexplicit instructions from the vaccinating physician, or a lack of care in selecting the best vaccine, are responsible for the bad arms, and doubtless there are people who are not in proper condition to be vaccinated. But such cases are relatively rare.

And while we are speaking of vaccination, it is pertinent to ask ourselves what influence a century of vaccination has made upon the disease itself. Has the organism which causes smallpox, whatever it may be, been worsted in the struggle so that it is losing its virility, and

is vaccination one of the important agents in bringing this about? Are the unvaccinated children of vaccinated parents partially protected by such vaccination, and if so, will there not come a time when all are naturally immune to the disease? The recent investigations along the lines of serum action and reaction would seem to indicate this, and we might conclude as much from past experience with all contagious diseases.

Regarding the etiology of the disease, it no doubt seems strange to many that nothing more definite is known when so many able observers have been devoting so much time to it in the past ten years.

One thing may be stated in regard to it, and that pretty definitely, viz., that while it is probably produced by a minute organism having great vitality and capable of being very readily disseminated, this organism differs very materially from any of the forms of bacteria with which we are acquainted. In fact, it is more likely not a bacterium at all, but resembles more the plasmodium of malaria and is ameboid in its nature. If a bacterium, it is probably so small that it cannot be seen even with the highest powers of the microscope, except by special staining processes, and that it requires special as yet unknown culture media upon which to produce a growth. If the second supposition, i. e. that it is an ameba, is correct, the failure to produce a growth on culture media is at once accounted for.

Nothnagel believes that the organism described by L. Pfeiffer, and which he found in the blood of patients having smallpox or vaccinia, is the cause of the disease. It is about one-quarter the size of a red blood corpuscle and forms pseudopodia. It also has a flagellum which can be demonstrated by Loeffler's method.

If we accept the theory even tentatively, that either of these organisms is the cause of the disease, or adopt the almost inevitable conclusion that smallpox is a germ disease produced in a manner similar, we will say, to diphtheria, of which we have some knowledge, we are forced to conclude that the various forms of smallpox—from the mildest form of varioloid to the worst confluent or hemorrhagic type of variola, are all one and the same disease and should be called by one common name, since in the minds of the laity in particular, and to some extent among the physicians, a looseness in nomenclature may create very erroneous impressions which require much explanation and great pains to counteract. Knowing as we now do, that the Klebs-Loeffler bacillus produces definite and specific pathologic conditions, and that the cause can be easily demonstrated, the inclination to call diphtheria by other than its true and commonly accepted name

is gradually diminishing. The same will be true of smallpox when its etiologic factor is easily demonstrable.

Now, the ease with which smallpox can be designated "Cuban itch" or chicken-pox without fear of successful contradiction, leads to much unnecessary exposure, and, as a result, a loathsome disease is contracted, families are put to great inconvenience, wage earners are kept from their work, and municipal funds are diverted from useful and beneficent purposes to keep in check this wholly unnecessary disease. Local governmental bodies may well afford to furnish free vaccination to all who are unable to pay for it. To do more than this is waste. Yet it is probable that they must continue to do much more than this for a long time to come.

In 1901 there were 29 cases with 1 death in Milwaukee, and up to the present time in 1902 there have been 236 cases with one death.

In addition to these reported cases there are many which were not discovered until after recovery. All except five of these reported cases were treated at the hospital.

The one death occurred in a woman 67 years old, who was extremely poor, and even at that age, took in washing, and did other hard work to obtain a living.

Since Oct. 1 there have been 125 cases, most of which were in the 9th, 10th and 22nd wards, 69 being in the 9th ward, and 44 in the adjacent 10th, 20th and 22nd wards. The remaining 11 were scattered about the city and were in most cases traced to outside sources, or had migrated from the 9th ward district. There were no extensions from any of these cases.

Disinfection of the premises and vaccination of every one who has been in contact with the patient are the methods which, in addition to the thorough isolation of the patients, will best prevent the spread of the disease, but vaccination and revaccination is by far the most important of them all, and nothing should divert physicians and sanitarians from this idea until something which has stood the test of years shall have proven its superiority.

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EDITORIAL COMMENT.

We call attention to the department inaugurated in our first issue, under the title "The Law in its Relation to Medicine". So far as we are aware—this is the only medical periodical that has taken up for presentation to its readers, both Medical Jurisprudence and the Law of Physician and Patient. In our first issue we dealt with "Privileged Communications to Physicians," and in this issue we treat of the "Physician's Obligation to his Patient." Whenever possible Wisconsin Statutes will be quoted, so as to make these articles as directly applicable to the physicians of this State as possible. Recent cases

and decisions of interest will also be cited from time to time. We know that this department here created will be of great interest and real benefit to our readers, and our calling attention to it in these columns is not for the purpose of exaggerating its importance (it cannot be exaggerated)—but simply to make known the scope and plan of the work in contemplation.

RECTAL FEEDING.

We wish to refer our readers to the article appearing in this issue of the Journal under the title "A Study of Two Cases Nourished Exclusively Per Rectum, with a Determination of Absorption, Nitrogen-Metabolism, and Intestinal Putrefaction". Dr. David L. Edsall of the Wm. Pepper Laboratory of Clinical Medicine, Philadelphia, is rapidly assuming a foremost position as a worker in Physiological Chemistry in this country, and we must greet as authoritative anything emanating from his pen. In the article here presented we are confronted with a series of experiments carried out with all possible scientific accuracy, and this must give the conclusions arrived at very great weight.

Only too often are we deluded into the belief that a patient—rectally fed—is deriving much sustenance from the food thus given, whereas, in reality, he is undergoing semi-starvation under our eyes. That patients can, in many cases, live for several days without food, is frequently witnessed now since the starvation treatment for appendicitis has been inaugurated. In gastric ulcer possibly the greatest opportunity for this treatment is afforded.

We recommend careful perusal of the article in question.

A STATE HYGIENIC LABORATORY.

The timely recommendation of the Wisconsin State Board of Health for a hygienic laboratory for the use of the Board, deserves the strong support of the profession throughout the state. Moreover, such a laboratory should be located in Milwaukee where the facilities for communication to all points in the state by post, telegraph, telephone, railway, and express are the most complete. There is scarcely a point of any considerable population in the entire state that cannot receive a reply from a laboratory located in Milwaukee, within twenty-four hours, and by many of the larger places a reply can be received within a much shorter period of time. The needs of such a laboratory require no enumeration for any practicing physician. The examination of public water supplies, and the limitation of certain outbreaks of germ diseases which can only be determined by a chemical

or bacteriological examination, or both, belong to the state, and the demand for such work is constantly increasing. It is decidedly unfair to the State Board of Health to have certain duties prescribed by law, and not provide the Board with the proper facilities to carry on the work demanded.

It is not because other states are provided with such laboratories that Wisconsin should ask for one, but because the demands of over 2,000,000 people require a service of the State Board of Health, which can in no other way be supplied.

The control of new and old systems of public water supplies and sewage disposal, and the examination of certain germ diseases constitute the most important work that falls to a State Board of Health to perform, and such work can only be properly done by a well equipped laboratory, properly located.

It has been considered almost a crime in civilized communities, for deaths to result from typhoid fever, and yet the disease is increasing in our state because—lacking efficient laws and a few thousand dollars' annual appropriation with which to carry on its work, the State Board of Health cannot exercise control or make proper investigations. The Board has, year after year, urged means to this end. A few thousand dollars will be the means of saving many lives. Cannot our law-makers have this situation presented to them in such a day by the members of the medical profession of our state that they will no longer refuse our State Board of Health this great need?

THE BUBONIC PLAGUE IN THE UNITED STATES.

Surgeon General Wyman and the representatives of the health authorities of nineteen states, Indian Territory and District of Columbia, met in Washington on January 19th to consider the subject of bubonic plague in the United States. Following is one of several resolutions adopted:

"That the present danger to California and to the United States lies primarily in the persistence, during nearly three years, of a definite nidus of plague infection in that part of San Francisco known as Chinatown, but the gravity of this circumstance is greatly increased by the gross neglect of official duty by the State Board of Health of California and the obstructive influence of the recent governor of California, by the failure of the city government of San Francisco to support its City Board of Health, and by the obstacles opposed to the operations of the United States public health service."

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS.

That the State Board of Medical Examiners is finding the path of its labors not strewn with roses, is well evidenced by the biennial report submitted to the Governor, and printed elsewhere in this Journal. The lack of funds with which to prosecute its work is proving an obstacle with which the individual members of the Board —work as they will—find it hard to cope. Several recommendations are made, the most creditable of which undoubtedly is the raising of the standard of preliminary requirements. We are pleased to note the efforts that are being made to establish inter-state reciprocity. No one can dispute the justice of such a measure, and the sooner the standard of admission is raised, the sooner will this State have the recognition of other State Boards, and the establishment of reciprocal relations will be the logical outcome.

INCREASE OF CRIME AND INSANITY.

In his report to Congress, Dr. Arthur MacDonald of the United States Bureau of Education, writes of the enormous "increase, relative to population, in crime, suicide, insanity and other forms of abnormality" during the last 30 years. This is indeed a most deplorable state of affairs, and yet there is a reason for it. The tendency exists here—as elsewhere—to concentration in large cities. This brings with it excitement and bustle, competition and strife, and must result in much wear and tear of nerve force. That under the storm and stress of such a life physical vitality suffers, mental vigor deteriorates, and hardening arteries act as the harbingers of an early senility, cannot be questioned. And again we find the effect of overcrowding in the houses of the poor and lowly: they degenerate in their filthy abodes, and the crime of the cradle finds here its natural lodgment and propagation. For the one class the numerous sanitaria now found in increasing numbers in all vicinities give asylum, and for the other—the poorhouse, penitentiaries and reform schools give refuge. The reaction—in the one class—brings with it, however, some interesting phases: the laudable fad for physical culture which may in due time help to offset the tendency to mental and bodily deterioration; added to this—a manifest desire to cut loose from crowding in cities, the citizen becoming a suburbanite, a ranchman, a planter, or a gentleman farmer.

This return to the free, rugged life of pre-city days may, as decades roll on, influence the physical and mental hardihood of coming "highborn" generations.

NEWS ITEMS.

Knowlton Hospital. This hospital has just completed an addition of twenty-eight rooms, giving it a greatly increased capacity. The whole building has been entirely remodeled. Two new operating rooms situated in the new addition, are completely equipped and have north and east light with sky-light. Connected with these operating rooms there is a special bath and dressing-room for surgeons. The entire building is steam heated, lighted with electricity and gas, and provided with elevator service. The rooms for patients are so situated as to admit the sun's rays to every room during some part of the day. The management will remain as heretofore, entirely under the control of the superintendent. The recent improvements make this hospital one of the most modern private hospitals in the northwest.

Retirement of Dr. Marks from the State Board of Health. After a quarter of a century of honorable and faithful service, Dr. Solon Marks of Milwaukee has retired from the Wisconsin State Board of Health. He is succeeded by Dr. Charles A. Harper of Madison. During Dr. Marks' period of service, and largely through his efforts, the work of the State Board has been systematized and perfected, so that it ranks high among similar organizations. Dr. Marks' work in this field, as well as in many others, is appreciated by the medical profession at least.

For many years he has been looked upon as a leader in the profession for which he has done so much, and no man in Wisconsin occupies a larger place in the hearts of medical men. He is truly the "grand old man" of medicine of this state, and we express the hope that, although an experience of fifty years in the practice of his profession lies behind him, he may be permitted to enjoy many more years of ease and contentment among us. The medical profession needs the counsel and advice of such men as Dr. Marks.

Action of Regents of University of Wisconsin Upon Request of Medical School for Affiliation. The Regents of the University of Wisconsin took under consideration at their last meeting, the proposition of the Wisconsin College of Physicians and Surgeons, looking toward affiliation with the University, and decided that the establishment of a complete medical department at this time would involve the expenditure of more money than the legislature would consent to appropriate. It is understood, however, that they contemplate a course of study at the University, embracing the work of the first two years of medical schools.

Report of Illinois State Board of Health. In its Biennial Report just submitted to the Governor, the State Board of Health of Illinois strongly recommends the appropriation of funds for the immediate construction of a State Sanitarium for Consumptives.

Index Medicus. The Index Medicus, which suspended publication in 1899, has been revived and will be published by the Carnegie Institution. It will be known as "The Index Medicus, Second Series, Vol. I," and commences with January, 1903. Robert Fletcher, M. D., will be editor in chief. This important publication is not issued for profit; it deserves the support of all who are interested in medical literature.

Medical Library and Historical Journal. A new quarterly to be known as the "Medical Library and Historical Journal" was launched in New York January 15th. It will be edited by Drs. J. S. Brown and A. T. Huntington. It will be devoted to the interests of medical libraries, bibliography, history and biography, and will be the only magazine published in the English language devoted to the subject of medical history. In addition to the above features a complete Index Medicus will be published. Communications should be addressed to Medical Library and Historical Journal, 1313 Bedford Ave., Brooklyn, N. Y.

Fund for Study of Tuberculosis. Dr. L. F. Flick, President of the Free Hospital for Consumptives, Philadelphia, announces that Henry Phipps of New York has contributed a fund of $300,000 to establish an institution in Philadelphia for the treatment and study of tuberculosis. The institution is to be known as the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Dr. Flick will be director general, and has already selected members of the staff. Temporary quarters will be engaged and work on the new building will be commenced as soon as a site can be secured.

THE LAW IN ITS RELATION TO MEDICINE.

By EDWIN S. MACK, A. M., LL. B.

The Physician's Obligations to his Patient.

The Supreme Court of Wisconsin has laid down the general rule that "a physician or surgeon, or one who holds himself out as such, "whether duly licensed or not, when he accepts an employment to "treat a patient professionally, must exercise such reasonable care "and skill in that behalf as is usually possessed and exercised by "physicians or surgeons in good standing, of the same system or "school of practice, in the vicinity or locality of his practice, having "due regard to the advanced state of medical or surgical science at "the time."

This duty does not arise from any special contract, but is one implied by law from the very relation of physician and patient, and therefore it binds the physician in every case, and whether he serves with the expectation of compensation or gratuitously. Likewise the obligation is binding on every one who attempts to minister to the sick whether or not he be in fact qualified. The obligation rests not on the physician's legal capacity or authority to act, but on the fact that he holds himself out to the patient as a person qualified to treat diseasee.

So a spiritualistic or clairvoyant physician who practiced before the enactment of the present statutory regulations, was held to the same standard of skill required of a regular practitioner. (72 Wis. 597.)

It will be seen from this general rule that the physician is only obligated to exercise *reasonable* care and skill. He is not in any sense an insurer, and if his treatment is justifiable, it is immaterial whether the results are good or bad. Likewise the physician is not required to judge absolutely correctly. The courts appreciate that no man's judgment can be unerring; and a physician is not liable for a mistake in diagnosis or in treatment, unless the error is one which would not have been made by a physician exercising the reasonable care and skill, which the law sets up as a standard.

In determining the degree of skill required of the physician, the law distinguishes between the general practitioner and the specialist. A general practitioner is not expected to bring to any case greater skill or knowledge then is usually possessed by physicians who have to keep in touch with all classes of practice; on the other hand, a specialist is held to that higher degree of skill and knowledge which can be expected of one devoting special study to a particular branch of medicine. However, in judging the skill of a general practitioner, the law books to the standard of physicians and surgeons in good standing, and does not adopt as a basis the lower average which would result if untrained and unskilled men were included in the estimate.

Another limitation is that a physician is to be judged not by the standard of physician generally, but by those "in the vicinity or locality of his practice". Thus a practitioner in a country town with few available resources would not be held to as high a standard as a practitioner in a large city enjoying great professional advantages. It will be noticed, however, that regard must also be had to the advanced state of medical or surgical science at the time, and in applying this test, consideration must be given to the school of medicine to which a physician belongs. A homeopathic or eclectic physician, for example, would be expected to have the amount of learning that a physician or surgeon in good standing of his own school would have. At the same time it is not every chance set of doctrines that the law will recognize as a school. To-day, undoubtedly in Wisconsin, the only schools which could be recognized would be those authorized by statute, namely: allopathic, homeopathic, eclectic and osteopathic; and the osteopathic school could not be held to cover any teachings regarding the prescription of drugs or the perform-

ance of surgical operations. The test of a school of medicine is that "it must have rules and principles of practice for the guidance of "all its members, as respects principles, diagnosis, and remedies, which "each member is supposed to observe in any given case," (72 Wis. 598). All four of the classes recognized in Wisconsin would, of course, fulfill these requirements. A practitioner will not be heard to plead that he followed the principles of any school, unless that school satisfies the legal test. For example, in the case of *Nelson vs. Harrington,* (72 Wis. 591), a clairvoyant physician who had diagnosed and treated a case of hip-joint disease as if it were rheumatism, pleaded that he was a spiritualistic or clairvoyant physician, and had followed the teachings of his school by going into a sort of trance condition, and while in such condition giving his diagnosis and prescriptions. The court determined that such methods did not show any fixed principles or formulative rules which could be denominated as the principles of any school, and held the clairvoyant physician to be responsible for the same degree of learning and skill that a regular practioner should have had.

The doctrine that adherence to the rules of his school justifies the physician's treatment, has in it one serious drawback, in that it prevents the making of experiments. Legally a physician is bound to follow the accepted practice, and he has no right to experiment without the patient's consent; and therefore, if an experiment results injuriously to the patient, the physician is liable for the injury, unless the patient has knowingly authorized the treatment. For this reason a physician should be careful in every case when departing from accepted practice, fully to inform the patient of the facts, and obtain his approval of the treatment. Sometimes, of course, the patient's condition will not permit such explanation, and in such cases, the patient's relatives should be informed, not so much for the legal as for the moral weight of their consent.

Recent Cases.

In *Lathrope vs. Flood,* 135 Cal. 458, the Supreme Court of California, gives its support by implication to the doctrine that a physician after once assuming the conduct of a case has no right to abandon it without giving the patient an adequate opportunity to procure other assistance. The case was rather a peculiar one. The physician was making an instrumental delivery in a case of childbirth, and the patient screamed with pain. The physician told the patient either to quit screaming or he would quit the case. She screamed again and he thereupon wrapped up his instruments and

left the house without giving any directions to the patient or the nurse or saying anything further.

In *Ladd vs. Witte*, 92 N. W. Rep. 365, the Supreme Court of Wisconsin holds that in a suit by a physician for compensation for his services, the jury can not make their own estimate as to the value of the services, but are bound to decide according to the evidence of physicians who testify as experts, as to the proper charge. It was also decided that if the services are rendered properly, it is immaterial whether or not the results are beneficial to the patient.

CORRESPONDENCE.

CHICAGO LETTER.

Dedication of Senn Hall. On Dec. 17, Senn Hall, the new building of Rush Medical College, was dedicated, and Sir William Hingston of Laval University, Montreal, delivered the address. In concluding, he warned surgeons to be more conservative, in the following words:

"The immunity with which the most formidable operations are now performed, has given a confidence—might I not say a recklessness possibly—which renders the staying hand of the physician of priceless value. Especially is this true when, as it sometimes happens, the inexperienced surgeon hurriedly resorts to a tentative operation, to establish a diagnosis, where one more experienced would see no reason for the procedure. I have more than once observed the meddlesomeness of a surgeon to be in direct ratio to the measure of his inexperience."

Rush Medical's Needs. Rush Medical College is to become an organic part of the University of Chicago, if the trustees can raise $1,000,000 before July 1st, 1903. This money will be expended in the erection of new buildings and for additional equipment for instruction. If the friends of medical learning will rally to the support of Rush Medical College, it will be second to none in facilities for study and investigation, and Chicago will be foremost in the ranks of medical centers.

Professor Lorenz given the Degree of LL.D. Dr. Lorenz returned to Chicago in the latter part of November to see the patient upon whom he had operated. He said the case of Lolita Armour was progressing nicely and was confident of a good result.

On Nov. 28th he was given the degree of LL.D. by the Northwestern University.

A New Hospital. The Lakeshore Inn is the name selected for a new private hospital, equipped elegantly in every respect, for the care of well-to-do patients. It is to be of steel construction, absolutely fire-proof, and the walls

padded to be sound-proof. In furnishing it will be as elegant and artistic as the most luxurious modern hotel. Dr. Franklin H. Martin is president of the organization, and Dr. B. W. Sippy, vice-president. About eighty of the physicians of Chicago have agreed to take stock in the institution.

County Fund for Improvement. The Cook County Commissioners will spend $350,000 for additions to the hospital quarters at Dunning, and to the Cook County Hospital. The latter institution is to have a new building for the care of contagious cases.

Pasteur's Institute at Chicago. Since the opening of the Pasteur Institute in July, 1900, 1,538 cases have been treated. Of this number 1,382 were bitten by rabid dogs, nine by human beings suffering from hydrophobia, and the remainder by various animals. Seven deaths are reported, making a mortality of less than one-half per cent.

St. Mary's Hospital. Dr. J. B. Herrick has been appointed physician-in-charge of the Department of Internal Medicine, and Dr. John Edwin Rhodes to the Department of Laryngology in the St. Mary's of Nazareth, the new hospital on North Leavitt Street. (W. W. P.)

BALTIMORE LETTER.

During the past two months some rare and interesting cases have been admitted to the Johns Hopkins Hospital, and, as a consequence, the meetings of the medical society have been of special interest. At the meeting held November 17th, Dr. Thomas showed a case of *Paraplegia associated with Fibroma Molluscum*. The patient is a female fifty-one years of age. There is nothing of importance in her family history. Her past history is also of little importance. She menstruated from sixteen to forty-eight. As a girl she noticed numerous tumors in various parts of her body, and also small pigmented areas, but they never gave her any trouble. Five or six years ago she noticed an increase in the number of these growths. About this same time she had pains of an intense character which began in one ankle, but within a short time involved the whole leg and the opposite leg and back. These pains have persisted until the present time. About two years ago she began to have pains of a similar character in the arms, and at this time she first noticed a slight difficulty in walking. At first this was simply a limp, but it became progressively worse until now her legs are completely paralyzed. The only voluntary motions she can perform are flexion and extension of the toes of the right foot. About a year ago she began to lose control of her arms, and a twitching was noted in the muscles. She has been troubled recently with ringing in the ears, some difficulty in swallowing, and hoarseness. During the past month voluntary control of the bladder has been lost, and the patient has required catheterization.

On examination, the body of the patient is seen to be covered by an enormous number of tumors. They vary in size from that of a pin head to that of a large cherry. Besides the tumors there are large numbers of pigmented spots which suggest new tumor growths. None of the nerve trunks are involved. The cranial nerves are all found to be normal. There has been progressive weakness and atrophy of the arms and legs. The tendon reflexes are present in the arms, but are lost in the legs. All the muscles of the upper extremity respond to electrical stimulation of their nerve supply with the

exception of the small muscles of the hand. There is a loss of electrical irritability of the muscles of the legs with the exception of those in which the voluntary control is retained. The skin is sensitive excepting over the tumors. Here all sensation is lost. The muscle sense is very acute. The paralysis in this case was explained by Dr. Thomas as probably due to the pressure of tumor growths upon the spinal nerve roots.

At the meeting held December first two cases were exhibited which deserve special mention. The first is a case of *Blastomycetic Dermatitis* and was shown by Dr. Gilchrist. The patient is a well-built, healthy looking negro, twenty-nine years of age. He has been working as a farm hand. His family history and past history are of no importance. His present illness dates back to 1895, when he had a sore of considerable size in the right groin. This—after some months—healed without giving him much trouble. In April, 1902, he had a recurrence of this sore, which began as a pimple but spread rapidly. He came to the hospital then for advice, was admitted and after some months' treatment was discharged entirely well so far as the skin lesion was concerned. The fungus, however, had evidently not been eradicated, for he returned on November twentieth presenting a much more extensive lesion than at either of his previous attacks. The disease recurred last August and has been spreading gradually ever since, until his present admission. At the time the patient was shown before the society there were three sores. The largest of these measured fully a foot in length and three inches in width, extending about the waist on the right side like a girdle. There was a smaller sore in the right groin, about two inches in diameter, and the third, situated in the region of the right nipple, was kidney-shaped and about three inches in length by two in width. These sores show a characteristic papillomatous form and are studded over the surface with miliary abscesses. They emit a very foul odor. They are painful only when invaded by pus organisms. Microscopic examinations of the pus squeezed out of one of the miliary abscesses showed the spores of the blastomycetic fungus. The patient is being given potassium iodide, which acts like a specific in these cases. Since he was shown before the society the sores have been healing rapidly. Dr. Gilchrist, in a recent paper on this disease, gives a full report of this case as it was during the patient's first stay in the hospital. This paper appears in the British Medical Journal for October 25th, 1902.

The second case of particular interest shown at the meeting on December first, is one of an infection with the intestinal parasite called *Uncinaria Americana* by Dr. Charles W. Stiles of the Bureau of Animal Industry, Washington. The patient is a man who comes from North Carolina, complaining of general weakness. He is twenty-two years of age. It is interesting to note that about a year ago one of the patient's brothers died of what the doctors called pernicious anemia. From the history given by the patient, however, his brother suffered from an infection with this same parasite. The patient is a rather thin, very pale individual. He has been a teacher. He was a puny child and never enjoyed very robust health. Last spring he had an attack of measles and has not been well since then. Since October, 1902, his bowels have been loose, but he has never had more than two stools in a day. On November seventh he was out in the rain and "took cold." Since then he has been unable to work. He has had considerable pain in the back of his head, but this has not been constant. He has had some nausea and occasional vomiting. There

has been no pain in the abdomen or back. Physical examination reveals no organic lesions. Since admission his temperature has been singular, reaching 103 several times. The blood count made at this time (November 27) was as follows: red blood corpuscles 2,742,000, leucocytes 5,500, haemaglobin 37 per cent. The blood picture was not that of pernicious anemia, but of a secondary anemia. Microscopic examination of the stools revealed the presence of numerous eggs which were identified as those of Uncinaria Americana (Anchylostoma Duodenale). Since he was shown before the society he has been given 60 grains of thymol in two doses, two hours apart, followed after four hours by castor oil. In the ten stools which followed, ten adult Uncinaria were found, but since then he has developed a new crop of ova.

The paper which attracted the most interest at the meeting of December 15th was one presented by Dr. Harris and Mr. Haskell. The subject was *Gonorrhoeal Myositis*, and was a report of a case which was recently under observation in the hospital. The patient was admitted to the hospital for some other trouble, but upon examination it was found that she had a large abscess in the gastrocnemius muscle of one of the legs. This abscess was opened by one of the surgical staff. On examining the pus microscopically the pus cells were found to contain large numbers of diplococci which were decolorized by Gram's method of staining. Cultures were then made from the pus and from these the organism was readily identified as the gonococcus. Dr. Harris claims that this is the only case of Gonorrhoeal Myositis on record in which the organism has been proven to be the gonococcus both by culture and by the slip preparation. R. G. W.

CLINICAL REPORTS.

ACUTE POSTERIOR URETHRITIS.

(Continued.)

Clinic Held by Prof. Finger of Vienna.

(Special Correspondence.)

The manner in which hematuria is produced in acute posterior urethritis, is believed by Finger to be the following: ordinarily the acutely inflamed mucous membrane is kept anemic by the pressure of the apposed walls. When the urine flows, the small vessels in the mucous membrane fill with blood and the tissue becomes swollen. It bulges both into the lumen and even a little into the beginning of the anterior urethra. When micturition is completed, the muscles about the urethra contract and squeeze the blood out of the vessels. Inasmuch, however, as the vessels flow through the muscles to reach mucous membrane, their proximal ends are closed and the blood is forced through the mucous membrane into the urethra. It must be

remembered that the vessels in the inflamed mucous membrane are incomparably larger than under normal conditions. Most of the blood remains in the posterior urethra. A few drops, though, exude from the mucous membrane and appear at the end of urination. The portion in the posterior urethra clots and is ejected at the beginning of the next passage of urine. Therefore, when blood appears as a result of posterior urethritis, we find it, 1st), at the very beginning of the process in the shape of a small clot, and 2nd), at the very end, in fact, after the urine has ceased to flow.

As a convenient guide to the differential diagnosis of acute anterior, posterior urethritis and urethro-cystitis, Finger gives the following table:

	Urethritis Anterior	Urethritis posterior	Urethro-cystitis
2 Glass test:			
Glass 1	Cloudy	Cloudy+	Less cloudy or not more so than 2nd glass
Glass 2	Clear	Cloudy or clear	Cloudy
Irrigation test			
After irrigation	Clear	Cloudy with threads	
Reaction		Acid	Acid or alkaline
Filtered urine			
Albumen in 2nd part		o	+(Proportionate to pus)
Microscopic exam. of 2nd part		Pus cells with gonococci; bacteria are gonococci only	Much epithelium and many pus cells. Staphylococci, streptococci and bac. coli communis appear, rarely gonococci

Remarks on table: Where blanks appear, examination is not essential to a differential diagnosis. It is estimated that 0.1 per cent. of albumen appears in the urine to every 100,000 pus cells in the cubic millimeter. If more is present, albumen comes from the kidney.

Gonococcus cystitis occurs, but is rare, occurring about once a year in Finger's practice. The urine in such cases looks like coffee with cream, and is absolutely characteristic.

The necessity of recognizing the condition of posterior urethritis is almost self-evident. In the first place, irrigation with the syringe ordinarily used does not reach the posterior urethra. Gonorrhea cannot be considered healed, as long as gonococci are still present in the posterior urethra, as recurrences (auto-infection) or infection of others occur under these circumstances. On the other hand, most of the complications (epididymitis, prostatorrhea, spermatorrhea) result from infection from the posterior urethra. Again, when the condition becomes chronic, pus does not appear at the meatus, but remains in the posterior urethra or flows back into the bladder, so that the patient believes himself cured and thinks that each new attack is a fresh infection, while in reality it is an auto-infection. In fact, when a patient suffers on several occasions from anterior urethritis, we can feel quite confident that the source of the infection is the posterior urethra. (L. M. L.)

BIENNIAL REPORT STATE BOARD OF MEDICAL EXAMINERS.

To the Honorable R. M. LaFollette, Governor of Wisconsin.

HONORABLE SIR: Herewith is submitted the biennial report of the Wisconsin Board of Medical Examiners for the period ending December 31, 1902, as required by law.

The Board has held all the regular meetings required by statute as well as a large number of special meetings called by the President, examined all the credentials of persons submitted for the purpose of registration, examined all applicants for license and granted certificates of registration and licenses to all persons found entitled thereto. Herewith is annexed a statement of the receipts and disbursements of this Board for the biennial period, covered by this report.

There is more need for medical legislation. After strenuous efforts and labor with three different legislatures to get upon our statute books medical laws that would in reality protect the public against impostors, quacks and charlatans, we are constrained to admit that the remark of our Supreme Court in the recent case of State vs. Schaefer to the effect that our medical laws are in a chaotic condition, is correct.

On examination it will be found that the old medical laws, chapter 264, laws of 1897 (creating this board), chapter 87, laws of 1899 (the registration act), and chapter 306, laws of 1901, contain many conflicting provisions. It appears to be absolutely essential that our medical laws be

revised, harmonized and unified so that the protection of the public, which is the purpose of all medical legislation, may be effectual and reasonably complete. Whether the incoming legislature will be the proper body to which an appeal for a revision of our medical laws ought to be made, this Board is not in a position to state. But at all events this harmonizing of our medical laws, cutting out the unnecessary and obsolete provisions, and adding necessary and efficient provisions, ought not to be long delayed.

Whether our medical laws can be immediately re-written and when so re-written, passed, or not, the Board recommends the immediate enactment of a few special provisions. By the act of 1901 osteopathy was recognized and a member of that profession added to this Board. It appears that some courts have held that, since the act of 1901 does not provide a special punishment for practicing, osteopathy cannot be punished. We would therefore recommend that some legislation be had specifically punishing the practice of osteopathy without a license.

In regard to the act of 1901, under the provisions of which all persons now beginning the practice of medicine must present a diploma from a reputable medical college and pass the examination required by the Board before receiving a license so to practice, we would suggest that the standard of reputability of a medical college to be recognized by this Board should be raised as far as the elementary education requisite to admission to said college is concerned, from that required for entry to the junior class of an accredited high school of this state, to the completion of a course in such accredited high school including at least one year's study in Latin. The requirements for a preliminary education cannot be too stringent.

Many complaints have been made to this Board against persons alleged to practice medicine contrary to law. Some of the persons making these complaints are laboring under the misconception that this Board has plenary powers to examine and punish the violation of the medical laws. The law requires the Board to investigate all complaints of violations of the law and to bring all such cases to the notice of the proper prosecuting officers. The Board has been seriously hampered during the past two years in carrying out this mandate of the statutes by the lack of funds. The income of the Board from all sources has been barely sufficient to pay the necessary expenses of the members of the Board in performing the duties imposed upon them in connection with the examination of applicants for licenses. An accounting of the finances shows at the end of this biennial period a deficit in the treasury of the Board of $494.39. We have absolutely no funds at our command for the payment of the necessary expenses to investigate the many charges of violation that have been lodged with us. According to our last report, there was deposited with the state treasurer the sum of $863.31 as a balance of said biennial period. Since the creation of this Board and the performance of its duties is in no wise a burden upon the tax payers, we would respectfully ask that the sum of $863.31 be turned over to our treasurer so that this Board may have the necessary means effectually to enforce our medical laws.

During the period just closed your Board has been called upon to investigate and pass upon the charges brought against the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons.

After a thorough investigation in both cases, and, while some irregularities were apparent, nothing of a serious nature was established against either institution, and your Board is satisfied that both colleges are now making a determined effort not only to comply with the requirements of the law but also to give thorough and complete instruction.

Your Board has taken upon itself to supervise the instruction given at these institutions, such supervision, however, being so far confined to an examination of the credentials of the matriculates of the two institutions. According to a provision of the law of 1901 reciprocity or exchange of license between various states has been established with several neighboring states and a plan is well under way to make this practice universal within the union.

The standard of medical science, like the standard of every other profession, is being continually advanced, and it has been the aim and purpose of this Board to keep the medical profession of the State of Wisconsin abreast with the profession throughout the world. That we have fully succeeded in this effort we do not claim, not because we did not try but because of the defects in our medical laws and because of lack of funds to enforce the laws we have.

This much we can say, however, that notwithstanding these adverse conditions, the standard of the medical profession in Wisconsin to-day is immeasurably higher than it was previous to the enactment of the medical laws known as chapter 264, laws of 1897.

(Synopsis of Finances follows.)

Respectfully submitted,

FILIP A. FORSBECK, M. D.,
Secretary Wisconsin Board of Medical Examiners.

Dec. 15, 1902.

SOCIETY PROCEEDINGS.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The thirtieth annual meeting of the American public health Association was held in New Orleans, commencing Monday, December 8, 1902, and continuing through five days. The first day was devoted to the Bacteriological section, which was well attended. Much discussion was held on the subject of *Bacillus Coli in Ground Waters,* the consensus of opinion being that the presence of the B. coli in wells should condemn those waters for domestic use, and although B. coli may accidently occur in springs, unless its presence is to be accounted for, it is to be considered suspicious. This section on

bacteriology has been in existence only a few years, and is a valuable auxiliary to the Association, and it contains many of the most prominent bacteriologists in the country, all of whom take a deep interest in the work of the Association.

The general sessions of the Association were opened Tuesday morning, December 9th. Three sessions were held this day. Among the more important questions that were considered was Koch's theory that bovine tuberculosis cannot be transmitted to human beings, and it was the consensus of opinion by those present that Professor Koch had made a misstatement, and that it was now actually proven to the contrary. This opinion was very strongly upheld by Dr. D. E. Salmon, of the Agricultural Department of Washington, Dr. E. A. deSchweinitz of Washington, and Dr. M. P. Ravenel of Philadelphia.

On the second day Dr. Wingate of Wisconsin read the report, as Chairman of the Committee on National Legislation, giving a brief outline of the creation of the Public Health and Marine Hospital Service, and recommended that the committee be continued for the reason that it was as necessary to guard against objectionable legislation, as it was to favor desirable legislation, and that some committee should have charge of this matter. By vote of the Association the report of the committee was accepted and the committee continued.

Probably the most exciting discussion followed the consideration of the communicability of yellow fever through the mosquito. Dr. Ross of the Navy, Dr. Gorgas of Havana, Dr. Finley of Havana, Dr. Guiteras of Havana, Dr. Liecaga of Mexico, Dr. Edmund Souchon and others of New Orleans took part in the discussion. Dr. Ross of the Navy and the gentlemen from Havana took the ground that the mosquito was the only intermediate host in the communicability of yellow fever, while the gentlemen from Louisiana were hardly willing to accept this conclusion. The experience with the disease at Havana since this theory has been promulgated would seem to be very convincing. No quarantine or disinfection are practiced there now. A case of yellow fever is merely protected by mosquito netting from any mosquito lighting upon him; he is taken through the streets in a public conveyance, lodged in a hospital beside other patients, and the disease has never spread, the only precaution being taken is that of preventing any mosquito from biting the patient suffering from yellow fever. This has been repeated so many times that it seems very convincing evidence. We understand that Dr. Doty, the quarantine officer of the port of New York, has accepted this position, and henceforth will not quarantine or disinfect any

cases of yellow fever. This means an enormous saving to commerce throughout the country, and from a financial standpoint, to say nothing of the other advantages, is one of the most important discoveries in sanitary science of this age.

The subject of National Leper Homes was discussed by Dr. H. M. Bracken of St. Paul, Minnesota, who presented the report of the committee on that subject. The committee recommended the establishment of National Homes for lepers, and especially was this important at the present time, as among the new possessions of the United States many lepers have residence, especially in Hawaii.

The sanitation of cars and steamboats received considerable attention, and the committee having charge of that matter reported progress, as some of the railroads are beginning to construct cars on a sanitary basis, and much more attention is being given to the subject than formerly.

The question of Bubonic Plague in California was also carefully discussed, and more urgent recommendations adopted relative to controlling this disease. Undoubtedly the Public Health and Marine Hospital Service will take an active hand in this matter at an early date.

Nearly all important sanitary subjects were considered by the Association, either through reports of committees or by papers read on the various subjects. The meeting was a most valuable and important one, and no one interested in sanitation can well afford to miss these meetings. Dr. Walter Wyman, the Surgeon General of the Public Health and Marine Hospital Service, was elected President for the ensuing year, and the next place of meeting will be Washington, D. C.

MILWAUKEE MEDICAL SOCIETY.

The regular meeting was held December 23rd, 1902. President F. Shimonek in the chair. Dr. N. M. Black presented a patient with optic nerve atrophy, who showed a complex, atypic variety of nervous symptoms due to degenerative processes in the spinal cord. Dr. Richard Dewey presented a very exhaustive and interesting account of a case of circular insanity, diagnosed as "paresis" in 1889, during early stages, by several eminent alienists; continuing twelve years, with a remarkable series of manic-depressive cycles. The

subject, a prominent attorney, showed during his exalted periods remarkable brilliancy in repeatedly successfully conducting his own insanity trial, as well as other legal cases, atttracting attention by his eccentric behavior in every part of the northwest. Death from typhoid fever in 1901. Post mortem findings and demonstration of microscopic slides of brain were presented by Dr. Thos. Rothstein, from the pathological laboratory of the University of Chicago. There were no demonstrable pathologic changes excepting those attributable to the typhoid fever, thus establishing conclusively the error of the diagnosis of paresis.

At the annual meeting held January 13th, 1903, the following officers were elected:

President, Dr. A. J. Burgess; first Vice President, Dr. E. W. Kellogg; second Vice President, Dr. L. F. Jermain; Secretary, Dr. Wm. Thorndike; Treasurer, Dr. U. O. B. Wingate; Librarian, Dr. H. V. Ogden; Curator, Dr. J. M. Beffel; Member of Committee on Membership, Dr. N. M. Black; Members of the Council: Drs. H. A. Sifton, W. H. Washburn, F. E. Walbridge, Wm. Jobse, F. Shimonek, A. T. Holbrook.

Dr. P. H. McGovern was elected to active membership.

The society now numbers—according to the report of the secretary—121 members, of which number 109 are active resident, 9 nonresident, and 3 honorary.

BRAINARD MEDICAL SOCIETY.

January 14. 1903.

The Brainard Medical Society met at the Milwaukee Hospital, Milwaukee, at 11 A. M. Vice President Dr. A. G. White called the meeting to order; later, the Pres. Dr. A. I. Comfort assumed the chair.

The following members of the society were present: Drs. Heidner of West Bend; Juergens of Fredonia; Scott of Port Washington; Hausmann of Kewaskum; Schaper of Kiel; Philler of Waukesha, and Reineking of Sheboygan; also the following Milwaukee members: Drs. Comfort, Shearer, T. C. Malone, Thienhaus, Seaman, Dearholt, Mason, Fellmann, Stoddard, Mishoff, Harrington, Patek, Kaumheimer, Lauson, Mackie, White, Sayle, Sifton, Purtell, Nichols, Dr. Thienhaus presented a case of benign papilloma of the larynx with microscopic sections. Dr. Reineking presented a rare pathological

specimen, the very extremely attenuated right auricle of a heart, removed from a patient who died of angina pectoris. The committee on Practice presented a symposium upon the subject of Chronic Articular Rheumatism. The following members took part: Dr. Kaumheimer, Etiology and Symptomatology; Dr. Stoddard, Internal Treatment; Dr. Shearer, External Treatment.

The subject "Intestinal Obstruction" was treated as follows: Dr. Schaper, Eiology and Varieties; Dr. Juergens, Symptomatology; Dr. White, Treatment. The subject was thoroughly discussed by the members of the society.

Dr. White presented to the society two foreign bodies which had caused Intestinal Obstruction, one a large mass of hair removed from a stomach, and the other an enterolith.

The following new members were admitted at this meeting: Drs. A. J. Patek and H. E. Dearholt of Milwaukee, and Dr. M. A. T. Hoffmann of Campbellsport, Wis. The next meeting will be held at the Milwaukee Hospital, on April 8th, 1903.

CHICAGO SURGICAL SOCIETY.

January 5, 1903.

The President, Dr. John B. Murphy, in the Chair.

Dr. E. J. Senn read a paper on "Transplantation of Omentum in the Operative Treatment of Intestinal Defects."

His contribution was both clinical and experimental. After refering at length to the work of other investigators, and detailing a series of experiments for the purpose of investigating the possibilities of omental transplantation, he drew the following conclusions:

1. Transplantation of omentum over defects in the stomach is an established operation.

2. Transplantation of omentum over intestinal defects is recommended, but is still in the development stage.

3. Transplantation of omentum over defects in the cecum is the most favorable portion of the intestinal tract.

4. Transplantation of omentum over defects in the small intestine should only be done after fixation of the segment of the intestine to the abdominal wall.

5. Gauze drainage should be resorted to, excluding the general peritoneal cavity.

THE SURGICAL TREATMENT OF ANURIA.

Dr. Arthur Dean Bevan presented a paper on this subject, and detailed the history of a case of anuria recently operated upon with satisfactory result.

Total suppression of urine occurs:

1. From mechanical obstruction of the ureter of the single functionating kidney of an individual, the other kidney either being congenitally absent or destroyed by previous disease.

2. From mechanical obstruction of one ureter in an individual possessing two functionating kidneys, with increased intrarenal pressure on the obstructed side, which by reflex nerve action prevents the unobstructed kidney from functionating, the so-called reflex anuria; or, possibly, after a nephrectomy, the involvement of the nerves in the pedicle may produce a reflex anuria.

3. From trauma of both kidneys, which, for a time, or until a fatal issue, is followed by complete cessation of function; also from trauma of a single kidney which apparently by reflex action so affects the uninjured kidney that complete anuria results.

4. From acute nephritis, as sometimes seen in scarlet fever and other forms of septicemia.

5. From certain poisons, as phosphorous, lead and turpentine, ether, chloroform, etc.

6. From the peculiar condition known as urethral fever, commonly the result of the passage of a catheter of sound.

7. In the polymorphous symptom-complex, known as hysteria, anuria may occur.

The author stated that anuria is a condition, not a disease *per se*, and until the last ten years the condition has been discussed merely as a symptom occurring in a number of diseases, which usually marked a fatal termination, and for which little could be done by the medical attendant. Within the last twenty years, however, so much light has been thrown on the subject by Tuffier, Morris, Nael, and others, and so much good has been accomplished by intelligent surgical interference, that to-day the condition of anuria is entitled to be placed in the same class as the condition ileus, as one of sufficient importance to be considered and handled as a surgical entity.

After citing briefly several cases gleaned from medical literature, the author presented a classification, namely, first, obstructive; second, reflex or paralytic; third, non-obstructive or nephritic anuria.

From a careful study of the literature and of his own case, the essayist reached the following conclusions:

1. The clinical importance of recognizing the three forms of anuria—obstructive, reflex, and non-obstructive.

2. The imperative necessity of surgical interference in the obstructive and reflex forms, and its possible value in the non-obstructive cases.

3. That in the first two varieties a rapid nephrotomy on the side of pain, tenderness and muscular rigidity, is the operation of choice. If necessary, do not hesitate to make a double nephrotomy.

4. That nitrous oxide anesthesia is probably to be preferred.

5. That time-consuming operations to relieve permanently the obstruction are to be postponed to a later period, after the patient has recovered from the anuria.

6. Operate by the beginning of the third day.

CHICAGO MEDICAL SOCIETY.

January 7 and 14, 1903.

The President, Dr. Wm. A Evans, in the Chair.

Dr. G. Frank Lydston presented an interesting paper on "Plague as Observed in Sydney, New South Wales."

This city has had two epidemics of the disease, the first in 1900, and the second in 1902. The author gleaned much of his information from Dr. Ashburton Thompson, President of the Sydney Health Board. The first epidemic comprised 303 cases, 293 whites and 10 Chinese. The mortality was a little less than 34 per cent., but the mortality rate among the Chinese was 80 per cent. The 1902 epidemic comprised 141 cases. The origin of the plague was probably Hong Kong via Noumea, New Caledonia. The method of transmission was mentioned. The study of plague in Sydney has established the fact that the bubonic and septicemic forms are not catching. The bubonic type was most prevalent in Sydney. There were only a few cases of the septicemic form. Patients were treated at the hospital with Yersin-Roux anti-plague serum, and the contacts were inoculated with the Haffkine prophylactic serum, if they so desired.

The conclusions drawn by the health board in regard to these serums are:

1. That the value of the prophylactic serum is doubtful.

2. The use of the prophylactic serum is attended with obstacles

which make it almost impracticable, irrespective of its intrinsic merits.

3. The Yersin-Roux serum is also of doubtful value as a specific. Its action as a temporary reviver or cardiac stimulant seems to be demonstrated.

In the first epidemic there were 11,000 preventive inoculations. There was only one fatal case of plague in a vaccinated case.

PREVENTION OF PLAGUE.

1. Prevent rats from getting ashore from vessels by mooring some little distance from the wharf and freshly tarring all ropes, fenders and hawsers which extend from the ship to the wharf. All gangways should be drawn up when not in use. When used at night, gangways and the wharfs should be brilliantly lighted.

2. All ships should be thoroughly fumigated with sulphur or formalin before entry and departure. This is very effective in destroying rats.

3. Great pains should be taken to keep advised of the health of rats in exposed cities. Any unusual movements or mortality among them should be at once reported to the health authorities. Laboratory study should be constant.

4. The number of rats should be kept down, so far as may be, at all times, and especially when cases of plague are found. Fully fifty thousand rats were destroyed in Sydney within a few weeks, yet the number of rats was seemingly the same. There are, of course, many sources of error here, and, admitting the apparent fact, a simple explanation would not be far to seek. The equilibrium between the number of rats and the means of subsistence is pretty constantly maintained. A reward was offered for rats in Sydney, sixpence each being finally given. This bounty was too high. Rats breed fast, and mature quickly, and it would pay to breed them at that price. Probably this was not done.

5. No matter how remote the chances of contagion, so infectious a disease as plague demands isolation and great care to avoid immediate infection.

6. A general cleaning-up is required in districts characterized by bad sanitation. This is especially necessary because the destruction of scavenger rats demands in all fairness an equally efficient substitute for scavenger work.

7. Fumigation of all infected and suspected premises. If properly done, rats are destroyed at the same time.

It is interesting to note that of 23 cases of plague in Western

Australia in 1900, 21 were white, and 2 Chinese. Both Chinese, and only one white, died.

Dr. A. R. Small reported "A Case of Spina Bifida Without a Sac."

There was no membrane whatever over the cauda equina for the space of one inch. The skin was wanting over a space of two and one-half inches in diameter, and from the edge of the skin there was a gradual slope to the cauda equina, which could be plainly seen for the space of one inch. Spinal fluid flowed freely for several days, enough to saturate several dressings daily. At the end of a week granulations had covered the cauda equina and stopped the flow of spinal fluid. Urine was very scanty during the flow of spinal fluid; after that ceased, the urine was free. At the end of a month the opening was filled up to the level with granulations, and covered over with skin. There were no nervous symptoms. The child later developed hydrocephalus.

BOOK REVIEWS.

HISTORY OF MEDICINE WITH THE CODE OF MEDICAL ETHICS. By NATHAN SMITH DAVIS, A. M., M. D., L. L. D., Emeritus Dean and Professor of Medicine, Northwestern University Medical School, Chicago. Cleveland Press. Chicago, 1903.

This little book consists of 14 chapters, 209 pages, and embodies the course of lectures on the History of Medicine delivered annually, for several years, to the senior class of medical students in the Northwestern University Medical School.

This is an exceedingly readable, instructive and interesting volume, which makes no pretense to anything like an exhaustive view of the medical past, but aims to give a clear and accurate account of the origin and progressive development of the various branches of medical science and practice.

The reputation of the author, his long and useful career as a teacher, and his scholarly accomplishments would lead one to contemplate reading a production of this kind with pleasurable anticipation, and in the reading this anticipation is fully realized.

Chapter VII which deals with the social status of the profession,

and the progress of medical colleges and teaching, is especially interesting, as is also chapter XIII which deals with "Schools of Medicine," and chapter XIV which deals with the origin and progress of Medical Ethics to the end of the Nineteenth Century, including an account of the origin and adoption of the Code of Ethics of the American Medical Association. Those portions of the book dealing with the course of events in the medical history of the last half of the Nineteenth Century in America, are of more than ordinary interest because of the active part played in those events by the distinguished author, and because of his intimate and personal familiarity with the same.

A curious, probably typographic, error is noticed on page 84, where it is stated that Edward, King of England, performed a transfusion of blood in November 1667. The fact is that Edmund King, of England, who was physician to Charles II, performed this operation.

This book is worthy of a place on the shelves of every physician who is interested in the steps by which medical science and art have reached their present state of advancement. (W. H. W.)

DANGEROUS TRADES; THE HISTORICAL, SOCIAL AND LEGAL ASPECTS OF INDUSTRIAL OCCUPATIONS AS AFFECTING HEALTH, by a Number of Experts. 291 pp. Edited by *Oliver Thomas, M. A., M. D., F. R. C. P.* Published by John Murray, Albemarle St., London, 1903.

"The commencement of the Twentieth Century finds us discussing problems and elaborating plans for the amelioration of the life of the people. The last few years have witnessed an unexampled awakening of the public to a sense of its responsibility in regard to conditions of labor and unhealthy trades. The question is not should men and women work, but how do particular trades affect individuals, physically and morally?"

These opening sentences show the *raison d'être* for this work, and with the elucidation of these problems are given plans for amelioration of the physical and mental lot of laborers in various fields which are now or which may be put in force. The Workmen's Compensation Act was promulgated in 1898, but it cannot be said that it has had any material influence upon the reduction of reported cases of accident, probably because more accident cases are now reported than previously.—Ought dangerous trades be brought under this act which now only allows for accidents and not for diseases contracted in the work? Diseases may be either directly or indirectly due to the risks of the trade.

The subject has been under consideration even from the time of the great civilization of antiquity, when Pliny wrote of certain maladies as the "diseases of slaves," and at this date in England has ultimated in the Trades Act of 1898. The first governmental work were the investigations of the sanitary commissions of 1843-45, and 1869-71.

The author of this branch of the subject states that England is lagging behind the legislation of Germany, France, Austria, Switzerland and even Russia. In such paternalistic legislation other countries are, indeed, far ahead of the United States of America.

The personal sovereignty of the American Citizen has long ago lifted him out of the state and has protected him from the fate of the helot, the slave and the bondsman of ancient times, and his condition in this free country is a contrast to that of the poverty pressed employé of Europe even at the present day. The conditions of some of the miners, factory employés and sweat-shop laborers, in this country, approaches somewhat those of Europe, and is certainly remediable by enforcement of existing laws without the necessity of old world legislation of this type.

The authors of the essays are well-known specialists in this economic field. Among other subjects the work deals with infant mortality and factory labor, child labor and home work; the physiology and pathology of work and fatigue with mortality of occupations, are thoroughly discussed. Then the several authors take up the various occupations, such as, the soldiers, sailors, marines and railway services, agriculture, the lead and metal workers, phosporus, benzine, acetylene and chemical workers, and other well known dangerous or toxic trades. Diseases due to dust, poor air, increased or diminished atmospheric pressure and concussions. The chapter on Eye Diseases and Injuries in relation to industrial occupations by Simeon Snell, who has done so much for the elucidation of this subject and the amelioration of blindness in eye defects arising from certain trades, is of particular interest.

The illustrations are mainly well made photographic reproductions. The appendix and index are most complete; the typography and binding well done. The book is heartily recommended to all progressive physicians, particularly to practitioners of industrial and mining communities which furnish the larger proportion of diseases and accidents described in this volume. (H. V. W.)

CURRENT LITERATURE.

MEDICINE.

W. H. Washburn, M.D., Jos. Kahn, M.D., O. H. Foerster, M.D.

Gastroptosis. J. Dutton Steele and Albert P. Francine of Philadelphia, (Journal of the American Medical Association, Nov. 8, 1902) analyse seventy cases of gastroptosis.

From a complete and detailed study of these cases the writers deduce the following conclusions:

1. Gastroptosis is much more common than might be inferred from the meagre reference made to it in a majority of the text-books on general medicine. In women showing symptoms of gastric atony its presence is almost constant. It is much less frequent in men.

2. The occurrence of gastroptosis is not confined to any particular age or class of individuals. There are no causative factors common to all cases, and no explanation of its etiology heretofore given is broad enough to be wholly satisfactory, if we except the theory of congenital predisposition, which is entirely hypothetical.

3. The position assumed by the stomach in all of the cases was vertical or subvertical. Total descent was not observed and probably is extremely rare. Some dilatation of the pyloric extremity was always present. When this dilatation affects the pyloric end alone it may perhaps safely be assumed that the dilatation is secondary to the descent of the pylorus. In general dilatation and gastroptosis it is probable that the displacement is secondary to the dilatation. The data in regard to the position of the stomach were obtained in every case by inflation with air through the stomach tube. The colon was inflated through the rectum.

4. The transverse colon invariably shared in the displacement, assumed the M or V shape, and when inflated by air was in close contact with the greater curvature of the stomach. The hepatic flexure may not be displaced or may sink to the level of the umbilicus. The splenic flexure lies behind the stomach and eludes demonstration.

5. The right kidney was movable in 60.9 per cent of the cases. The left kidney rarely showed abnormal movability and the spleen in but one case. The fact that the liver was observed to be unduly movable and sagging downward in three of six cases operated on suggests that ptosis of this organ may elude our methods of physical examination and be more frequent than is usually supposed.

6. There is no condition of the gastric contents peculiar to gastroptosis. Absence or diminution of the free HCl is the rule. In a few cases the amount was normal. Hyperacidity was rare and usually occurred in cases where general dilatation existed, and when there was a strong neurotic taint.

7. There were no characteristic changes in the blood or urine.

8. The subjective symptoms were those of gastric motor insufficiency, and were of a mild grade in cases of primary ptosis, but more severe where general dilatation existed. Pain was present in the upper abdominal region in about half and in the lumbar region in a quarter of the cases.

9. The same causes that produce neurasthenia appear to favor the devel-

opment of ptosis of the abdominal viscera. When the two conditions are established they probably react on each other deleteriously, but clinically evidence tends to contradict the theory previously widespread that they have a direct causative relation.

Though the subject of treatment is not dwelt upon in the paper to any extent, lavage is adverted to for the purpose of stating that it is not indicated when mechanical support is applied unless there be great dilatation and retention of food. The authors found that lavage was of advantage only in cases of extreme atony and general dilatation with much retention, and also in cases in which, without dilatation, there is an excessive secretion of mucus.

(W. H. W.)

Pure Urea in the Treatment of Chronic Pulmonary Tuberculosis. S. Vere Pearson (Lancet, Nov. 22, 1902, p. 1383), details the histories of seven cases of pulmonary tuberculosis treated by the administration of pure synthetized urea.

The cases were thus treated in order to ascertain the trustworthiness of the conclusion reached by Dr. H. Harper, whose papers to the effect that "urea exerts a specific action on tuberculosis," were published in the Lancet in 1901.

The clinical histories of seven cases are transcribed somewhat in detail, and the results are compared with those of 100 other cases not treated with urea. These cases were all treated in the wards of the Brompton Hospital for Consumptives.

The average duration of stay in hospital was three months and the largest quantity of urea taken by any patient was 17 ounces in this time.

The result showed that whereas the average gain in weight of the 100 patients was 6¼ pounds, that of the 7 patients treated with urea was but 4½ pounds, and while in the first series of cases a gain in weight was accompanied by an improvement in physical signs, there was no improvement in the cases treated with urea, and in some of them there was a demonstrable extension of the disease in the meantime.

Urea appeared to exert no special influence on either pulse or temperature, nor did it appear to favorably influence expectoration either as to quantity or quality. The treatment improved neither the appetite nor the general vigor of the patient.

The total output of urea was increased but as a rule the increase was not equal to the amount administered. Urea acted as a diuretic as a rule, but in this respect its action was untrustworthy; the diuresis was most marked at the beginning of the treatment, the patient appearing to acquire a tolerance for the substance later. Urea did not act as a cardiac stimulant.

(W. H. W.)

The Treatment of Glycosuria and Diabetes Mellitus with Aspirin. R. T. Williams (Brit. Med. Jour., Dec. 27th, 1902), prescribed aspirin in forty cases of chronic glycosuria and diabetes mellitus. In twenty-nine cases the sugar excretion could not be carefully watched, hence no definite conclusions could be drawn although there was improvement in many cases. Eleven cases were carefully observed for a long time with the following results:

1. In four severe cases of diabetes the drug did not produce any decided effect on the sugar excretion.

2. In three cases of chronic glycosuria the sugar excretion ceased when aspirin was given, the diet being unchanged. The author believes that the arrest of the glycosuria was due to the drug, but he is prepared to admit that objections may be raised to this conclusion.

3. In four cases of diabetes mellitus of the milder form the sugar excretion appeared to be clearly diminished by the aspirin. The four cases last mentioned were patients in the Ancoats Hospital for long periods, and the sugar excretion was carefully estimated daily. When the aspirin was stopped for a few days the sugar excretion immediately increased and was again diminished upon a return to the drug. The diet remained unchanged during the entire time. Fifteen grains were given from four to six times daily although the author considers it wise to begin with ten grains two or three times a day and gradually increase the quantity. (J. K.)

Nitrogen Excretion in Pneumonia and Its Relation to Resolution. H. W. Cook (Johns Hopkins Hospital Bulletin, Dec. 1902) reports the results of a series of observations which he summarizes as follows:

1. In cases of pneumonia a surplus amount of nitrogen must be excreted during the days of resolution that will correspond at the least to the original quantity of exudate poured into the involved lung. In most cases there is more, the rest representing in great part a continuation of the formation and an absorption of inflammatory exudation, plus other tissue destruction.

2. In cases of marked delay in resolution the continued high nitrogen output indicates a continuation of the local inflammatory process, so that in those cases of several months' persistence we might speak of a chronic pneumonia.

3. In cases of rapid resolution the leucocytosis curve follows the curve of nitrogen excretion with a very striking parallelism, and would seem to point to a causal relation between leucocytes and resolution. (J. K.)

Acute Circumscribed Edema. F. Mendel (Berlin. klin. Woch., No. 48, 1902) reports in detail two cases, occurring in the same family, of acute circumscribed edema or Quincke's disease. The disease is hereditary in this family, nine of twelve persons in four generations having been affected; six deaths occurred with symptoms of sudden asphyxia (glottis edema). Mendel's first case, a girl aged 18, had been subject since early youth to the appearance at irregular intervals of colossal swellings of various parts of the body, occurring suddenly without known cause, lasting from several hours to 5—8 days, and never accompanied by constitutional disturbances. The patient had an enormous swelling of the left arm from elbow to fingertips, which had developed within 24 hours. The affected parts were yellowish white, wax like, non-inflammatory in appearance, did not pit on pressure, but showed some tenderness. Subjectively a feeling of weight and tension was complained of. Diaphoretics, saline cathartics, and an intestinal antiseptic, aspirin, were administered and within two days the edema disappeared and the arm had resumed a perfectly normal condition. The disease is to be differentiated from the circumscribed edema occurring during the course of various nervous diseases

(hysteria, syringomyelia, hemicrania, etc.), from urticaria, and from toxic exanthemata due to certain foods and drugs. His observations lead Mendel to conclude that the disease is not an angioneurosis, as is generally believed, but that it is of the nature of an autointoxication. The normal putrefactive products of the intestine act as lymphagogues in individuals with an inherited or congenital idiosyncrasy for these decomposition products. (The results of treatment appear to support this view, although judgment as to the value of any treatment is made more difficult in this disease by the fugacious character of the symptoms.) (O. H. F.)

PEDIATRICS.

T. H. Hay, M.D., R. C. Brown, M.D.

The Value of Diphtheria Antitoxin.—M. HOWARD FUSSELL (*The Philadelphia Med. Jour.*, October 25, 1902) in the conclusion of his paper makes the following rules:

(1) Always make a culture in throat cases; diphtheria cannot be certainly diagnosed without it. (2) When called to see a case of sore throat which is doubtful in character, give antitoxin at once and make the diagnosis by culture afterward. (3) When a case of undoubted diphtheria is seen, administer 2,000 units at once. If there is no improvement in six hours, administer 2,000 units again. Every twelve hours thereafter administer 2,000 units until improvement begins. (4) Always give a large dose; 2,000 to 4,000 units in the hands of the writer has proven sufficient, but in desperate cases much larger doses may be used, as proven by cases recorded.

He believes that in a case of diphtheria in an early stage it is only a matter of the administration of enough antitoxin to effect its cure. There should be no delay in giving antitoxin even in mild cases, for fatal pathological changes may take place in organs which the later administration of antitoxin will not cure. (R. C. B.)

Diphtheria With and Without Antitoxin. 159 cases.—CHARLES GILMORE KERLEY (*Archives of Pediatrics*, October, 1902). Of the cases reported, 103 were treated without the antitoxin and 53 with antitoxin. Of the first series 60 died and 43 recovered, and of the antitoxin cases 52 recovered and 4 died.

He concludes that the death rate in diphtheria may be reduced to a very small percentage by the early use of full doses of antitoxin, not less than 3,000 units to be given in the first 24 hours.

He establishes the following principles:

1. With a visible membrane inject at once and take culture.
2. In croup inject if there is inspiratory or expiratory obstruction.
3. The patient should be seen at 12 hour intervals.
4. Reinject in 12 hours if patient is not improved or if improvement is not marked.
5. If continued improvement does not follow reinject at 12 hour intervals until membrane disappears. (R. C. B.)

Analysis of Human Milk the Basis of Artificial Feeding of Infants.—ARTHUR V. MEIGS (*Archives of Pediatrics*, October, 1902) in a paper read

before the College of Physicians states that the result of twenty years' study of the subject shows: "First, that human milk never contains more than one per cent. of casein; and second, that the food of infants ought not to be changed in strength from month to month, as is commonly done. The amount of food should be increased, but no change should be made in its strength nor composition from the time an infant is born until it is from six to nine months old."

The first conclusion is the result of his analyses of human milk; the second was forced upon him by his experience in artifically feeding infants. He draws attention to the great variety of results obtained from analyses of milk by different chemists, and shows that there is practically no disagreement on the proportions of water, fat, and salts, but a marked lack of unanimity in regard to the percentages of casein and sugar. He makes a plea for more careful and reliable analyses of milk and closer relationship between the chemists and clinicians, and expresses the hope that a more definite knowledge of that complex body, casein, will be attained in the near future.

The discussion of the paper brought out some very valuable points in this connection. Dr. Joseph E. Winters took up the subject of centrifugal cream and said: "Centrifugalization alters the relation between the surface tension of the fat globules and milk-plasma; the stratum of casein solution is wanting; the fat globules become coherent. Centrifugal cream must be nearly proteid-free and the fat globules are united in a more or less coherent mass." Machine made cream should not be allowed in the feeding of infants, its coherent fat globules being indigestible, and the proteids being insufficient for the development of the child. He pointed out, also, the danger of employing heat in pasteurizing or sterilizing milk, showing that heat destroys the chemical combination between the proteids and mineral elements of milk, to which is due the development of scurvy and rickets.

Dr. Louis Starr agreed with the conclusions of the paper and the statements of Dr. Winters in regard to centrifugal cream, but thought the percentage of casein in favorable cases should be gradually increased from 0.50 during the first week of life until at the age of ten months it is raised to 2.50 per cent., the quantity ranging from one to eight ounces. (T. H. H.)

Milk Idiosyncrasies in Children.—LOUIS FISCHER (*Jour. Am. Med. Assoc.*, August 2, 1902) recommends what is known as Keller's malt soup as a food in the case of children who will not tolerate any dilution of cow's milk.

Keller's malt soup is prepared as follows:

Take of wheat flour 2 ounces and add to it 11 ounces of milk. Soak the flour thoroughly and rub it through a sieve or strainer. Put into a second dish 20 ounces of water, to which add 3 ounces of malt extract; dissolve the above at a temperature of about 120° F., and then add 2½ drachms of 11 per cent. potassium carbonate solution. Finally mix all of the above ingredients and boil. This gives a food containing: albuminoids, 2.0 per cent.; fat, 1.2 per cent.; carbohydrates, 12.1 per cent. There are in this mixture 0.9 per cent of vegetable proteids. The wheat flour is necessary, as otherwise the malt soup would have a diarrheal tendency. The alkali is added to neutralize the large amount of acid generated in sick children.

The author has used this malt soup most successfully in the treatment of cases of marasmus in which the children were simply starved. (R. C. B.)

Buttermilk as an Infant Food.—Since 1895 there has been some comment upon the advantages of prepared buttermilk—long used in Holland—as an infant food. The method of its preparation is as follows: To one liter of buttermilk, 15 to 25 grams of wheat flour and 35 to 50 grams of cane sugar are added. With constant stirring it is allowed to boil for at least two minutes. The milk is then poured into sterilized bottles and kept on ice until used. This food is given undiluted and to all ages alike. BAGINSKY (*Brit. Med. J.*, September 6, 1902), after a study of this subject, comes to the following conclusions: (1) Buttermilk as prepared and recommended by the Dutch physicians is a good food for acutely and chronically sick infants. (2) Prepared buttermilk is well borne soon after attacks of acute dyspepsia and summer diarrhea. (3) In chronic diarrhea and chronic enteritis cases it may be looked upon as a life saving preparation. (4) It is to be hoped that more observations be made upon its use as an actual food for healthy infants. (5) In the cases I have observed for a long time, I have never seen disturbances of nutrition such as rachitis or scorbutus develop. [One would hesitate to recommend buttermilk unless assured of its freshness. As ordinarily obtained it is more rich in bacteria and their products than is plain milk. Baginsky does not mention the possible beneficial action of the lactic acid which is known to aid digestion and prevent fermentation, and is often given in diarrhea mixtures.—C. H. S.]

THERAPEUTICS.

Chas. H. Stoddard, M.D., B. L. Schuster, M.D.

Treatment of Pneumonia.—R. W. WILCOX (*Am. J. of the Med. Sci.*, September, 1902), summarizes as follows:

1. Continuous, persistent, and generous administration of creosote carbonate (30 to 60 minims, every 6 hours.)
2. Careful adjustment of mechanical conditions (circulation).
3. Thorough evacuation of toxins in all possible ways.
4. Temporary supplemental oxygen by inhalation.
5. Liquid diet until physical signs disappear. Avoid antipyretics, opiates, and alcohol, ill advised external applications, and slowly acting heart remedies, as digitalis. (C. H. S.)

Treatment of Pneumonia.—WINTERNITZ (*Zeitschrift für Dietetische u. Physikalische Therapie*, June, 1902) discusses the beneficial results of cold baths in pneumonia: they lessen the danger of heart collapse, increase vascular tone, lessen respiratory frequency and improve respiration, innervation and expectoration. W. finds that if the patient comes under treatment immediately after the first chill, a cold bath will often produce a very favorable result upon the whole course of the disease. It is very essential that the baths be cold, not warm. After the first chill, the patient should be placed in a half bath of 20 C. the temperature to be lowered to 16 C. or even 12 C. He should remain in the bath from 10-20 minutes—until a reaction sets in.

While in the bath he should be thoroughly rubbed and cold water douches applied to his head and neck. Frequently it appears that the whole course of the disease is thus aborted. (B. L. S.)

Fever and Fever Treatment.—DR. BERGEL (*Therapeutische Monatshefte*, September and October, 1902) deduces his mode of treatment from what he considers the cause of fever. Every infectious disease, he states, is in its initial stage a local inflammation due to a known or unknown cause. Our therapeutic efforts should not be directed toward overcoming the rise in temperature, which is but a sign or symptom of inflammation, but if possible to act upon the causative factor of the inflammation, as illustrated, for example, in the use of antitoxin in diphtheria. As this is rarely possible our efforts should be directed to assist nature to overcome the invasion. The author lays stress upon a leucocytosis whereby chemical reaction of the leucocytes and their products, with that of the bacteria and their toxins is effected, so that less complex physiologically inert bodies are formed. Since cold water has been conclusively shown to effect a leucocytosis, stimulate heart, circulation, respiration, and nervous system, the author strongly urges its use in every fever. Particular attention should be paid to the heart and blood-vessels. The diet should be liquid or semisolid. Meats need not be totally avoided, but after a rich albuminous meal the author administers hydrochloric acid with pepsin. Frequent fanning after sprinkling cool water on patient will afford much relief. (B. L. S.)

Treatment of Diabetes.—EICHHORST (*Therapeutische Monatshefte*, September, 1902) considers the secret of treatment of D. to be the diet. Although he has used many drugs, (of late salol and antipyrin), and organic extracts (pancreas), he has found none capable of reducing the amount of sugar eliminated. As to the good effect of treatment in watering places, like Karlsbad, the same may in his opinion be obtained by careful home-treatment. Eichhorst recommends warm clothing, frequent moderate exercise, at least two warm baths a week, and total abstinence from worry and mental excitement. The patient should remain under lifelong care of a physician. Careful and frequent account of his weight and urine should be taken. The change of diet, from the ordinary to that prescribed by the physician, should be gradual, not sudden. On account of the loss of energy, due to the elimination of sugar in the urine, the quantity of food ingested should exceed that of a normal individual. The diet proper should consist largely of fats and meats. Instead of sugar, saccharin is to be used. Carbohydrates are to be avoided, excepting those cases in which loss of weight and increased weakness results. As no efficient substitute for bread has been found, Eichhorst recommends, in cases in which bread in small quantities becomes allowable, the use of graham bread which is pleasant to take, acts favorably on the bowels, and even in small quantities satisfies the craving for bread. He objects to alcoholic drinks, also to an exclusive milk-diet.

He recommends any clean fountain water, to which lemon juice or milk may, if desired, be added. (B. L. S.)

The Potato Cure of Diabetes Mellitus and Its Complications.—A. MOSSE (*Revue de Médicine*, February, April, July, 1902), concludes that a potato diet

is not only without danger, but of positive benefit to the diabetic. The potato may be a complete substitute for bread. Indications and contraindications to its use and the methods of preparing the potato are given. (C. H. S.)

Value of Amyloform as Substitute for Iodoform.—DR. GERLACH, in (*Therapeutische Monatshefte*, October, 1902) after referring to formaldehyde, its antiseptic, preservative, germicidal, and slightly poisonous action, its caustic action upon skin and mucous membranes, and its pungent odor, discusses the excellent results he and others have obtained in the use of amyloform.

Amyloform is a chemical compound of amylum and formaldehyde. It is an odorless white powder, insoluble in all solutions and can be heated without decomposition to 180° C. It does not irritate skin and mucous membranes, as does formaldehyde, but possesses all the advantages of the latter. Experimental results show, that when locally applied, even in large quantities, it produces no toxic symptoms. Its action is particularly pronounced in suppurating wounds. He finds that it cleanses wounds rapidly, that new granulations form, that in all cases the secretion is markedly decreased, and that the time for the healing process is very much shortened. The author has used it with success in old neglected ulcers with indolent granulations, dirty wounds with large suppurating areas and infected excoriations, phlegmonous processes on hands and fingers, panaritium, abscess cavities, furuncles, and carbuncles. Others have found it very efficient in tubercular cases, osteomyelitis, chronic otitis media, and in fact, in all cases where iodoform is used. (B. L. S.)

SURGERY.

F. E. Walbridge, M.D., H. A. Sifton, M.D., F. Shimonek, M. D.

Surgical Treatment of Cirrhosis of the Liver. Robert B. Greenough (American Journal of Medical Sciences, Dec. 1902) reviews this subject and gives a summary of all reported cases. He calls attention to the fact that like other new operations it has been done for a number of conditions for which it is entirely unsuited and for which it was not recommended by its author. He gives Talma of Utrecht the unquestionable claim of priority in this procedure. He also calls attention to the fact that Terrier of Paris in 1891 performed an operation of an entirely different nature from that of Talma for the relief of the condition known as biliary cirrhosis. This operation was popularized by Delageniere and goes under his name. This last operation consists of drainage of the bile ducts by cholecystostomy and the maintenance of the biliary fistula. He summarizes our present knowledge by stating that in biliary cirrhosis with enlarged liver, jaundice, and fever, without ascites, the proper operation for relief of this condition is cholecystostomy and drainage of the bile passages. In cases in which the liver was atrophic, the best results were obtained by forming adhesions between the omentum and the abdominal wall and between the liver and diaphragm without drainage. The operation is contraindicated in the presence of renal or cardiac diseases and when good evidence does not exist that sufficient functional tissue remains to maintain life. (H. A. S.)

Varicose Veins. Sir William Bennett (Lancet, Nov. 22, 1902) very thoroughly reviews this subject. He divides the cases into three classes: congenital, acquired, and intermediate. He states that the vast majority of cases of varicose veins are of congenital origin. It is doubtful if a really normal vein can be made varicose by any ordinary strain which may be thrown upon it after adult life is fully reached. Only by blocking the vein, by thrombosis, or by injury is it possible to produce acquired varix. What is classed as the intermediate form furnishes the vast majority of cases of varix coming under our care, there being a congenital defect which is exaggerated by strain. The enlarged veins are usually ranged in three main areas: in the line of the internal saphena, along the line of the external saphena, and lastly along the outer side and back of the thigh. This external set of varicose vessels usually results from some pressure within the pelvis and is often associated with pregnancy. Varicose veins usually make their appearance between the ages of 20 and 25 years, and when of the congenital type, they make their appearance prior to the occurrence of any symptoms and are really of little importance. After 50 years of age, the veins rarely increase in size but rather show a tendency to diminish. In the treatment of varix, the cases should be very carefully selected. With few exceptions varicose veins which cause no inconvenience, no matter how large, should be left absolutely alone. Treatment in such cases often leads to harm. There is no condition which we meet in practice to which the old saying, "Let sleeping dogs lie," applies more aptly than here. The majority of cases of varix can not be cured by any form of mechanical or surgical treatment. They can be relieved and in a few cases completely cured. There are two forms of treatment, mechanical and operative. In the operative treatment, the author lays great stress on the removal of the main trunk as high up in the legs as possible, and that at least three weeks should be allowed to elapse after the operation before the patient should make any attempt at walking and two months before active exercise. Operative measures in the external set of veins are only useful when the communication with the saphenal veins below is free. In such cases removal of from three to four inches of the most prominent portion of the varix on the outer side of the thigh is followed by great general improvement. (H. A. S.)

Clinical Study of a New Silver Salt in the Treatment of Gonorrhoea.—H. M. CHRISTIAN, M. D., in *Medical Record*, September 27, 1902, reports careful clinical investigations conducted for the past six months regarding the action of a new silver compound, argyrol, in the local treatment of gonorrhœa. In conducting these investigations no other drug but argyrol was employed; it was prescribed in the following manner: During the first week, injections of a two per cent. solution, with the ordinary two-drachm syringe, were used four times daily, the solution being held in the urethra five minutes. In the second and third week five per cent. solutions were used in the same manner; in the fourth, fifth, and sixth week as high as ten per cent. solutions were used without causing any pain or irritation. When the urethritis became total the hand injections were temporarily discontinued, and daily total irrigations with the salt were employed, beginning with 1 to 2,000, increasing in many cases to 1 to 500 solution. Deep installa-

tions of one, two, and five per cent. strength solutions were made in quite a number of cases without causing inflammatory reaction.

9 cases were cured in 2 weeks.
17 cases were cured in 3 weeks.
12 cases were cured in 4 weeks.
7 cases were cured in 6 weeks.
3 cases were cured in 8 weeks.

Christian summarizes as follows:

(1) That it is absolutely free from any irritating properties; solutions as high as five per cent. causing no discomfort.

(2) That the gonococci on and beneath the urethral membrane are rapidly destroyed.

(3) The amount of urethral discharge in a majority of cases at once lessened in a marked degree.

(4) The actual duration of the disease is shorter than is obtained by the use of any other silver salt. In our cases thirty-eight were cured in from two to four weeks. (F. E. W.)

ORTHOPEDICS.

Geo. P. Barth, M.D., H. E. Dearholt, M.D.

A New Method of Treatment for Fracture of the Neck of the Femur, together with remarks on Coxa Vera.— ROYAL WHITMAN (*Annals of Surgery*, November, 1902), is of the opinion that fracture of the neck of the femur in children and early adult life, is not so uncommon as authorities lead one to believe. The likelihood of the fracture being impacted probably causes it to be overlooked. He usually finds in these cases, when seen after repair is completed, shortening and limited abduction with prominent and elevated trochanter. This deformity is due to depression of the neck. The depression can be overcome by forcibly abducting the thigh to its normal range, using the rim of the acetabulum for a fulcrum. The weakened neck will give way before the head will become dislocated. The limb is maintained in this position until repair is accomplished. Two cases are reported with perfect result in one, and indications of equally good result in the other, sufficient time not having elapsed to give final result.

The same treatment is suggested in recent fractures in adults, in the belief that it would prevent deformity of this type. The method was used with satisfactory result in an adult, seen five weeks after the accident. An ambulatory splint is recommended for a time after walking is resumed.

Separation at epiphysis, while comparatively rare in his experience, is treated in the same manner.

When unable to restore the normal angle of the neck to the shaft, by the above method, he resorts to a wedge or linear osteotomy at base of the trochanter. He gives as etiological factors in Coxa Vera, exaggeration of pre-existent distorsion, injury, abnormally weak femoral necks, and congenital fissures in neck of femur. A report of twenty-one cases of fracture of the neck of femur in patients ranging from two to eighteen years, all but three due to falls, is given. Fifty-two cases of Coxa Vera are reported, forty-three unilateral, nine bilateral, in which symptoms were first noticed in childhood and adolescence. One-quarter were epiphysial and the rest cervical. (H. E. D.)

The Prevention of Deformity.—As compared with the brilliant results in other lines of Preventive Medicine, DR. TOWNSEND (*Journal Am. Med. Ass'n*, September 13, 1902), maintains that enough is not done to prevent deformity. Those deformities following paralysis, he says, are due to faulty positions and not to the original lesion, and may be easily prevented by light dressings, massage and manipulation.

Daily stretching of the limbs and movement of the joints, in patients long confined to bed, will prevent decubitus deformity. In concluding he says: "The prevention of deformity, therefore, should be clearly impressed on all those who are called upon to treat any condition that may lead to it, and once it is clearly understood that certain deformities frequently seen can be prevented, many a patient will be spared much inconvenience and subsequent trouble." (H. E. D.)

Shoe Deformities.—In a conservative article on foot clothing, BRADFORD, in the *New York Medical Journal* of October 11, 1902, sets forth the inadequacies of our present style of shoes. He asserts that barefoot and moccasin-wearing people are capable of tests of endurance greatly in advance of shoe-wearing people.

The shoe commonly worn is narrowest across the toes, whereas, measurements of normal feet show this to be the widest part of the foot. Constriction of the foot and ankle change the gait, as well as the shape of the foot, the toes becoming of little use in walking.

He grants that an improvement in the ordinary last has taken place, and that some attention at least is being paid to the foot by makers of shoe styles.

Children's shoes he believes are best without constriction of ankles, with a straight inner edge, not too short, and with room enough for a certain amount of spreading of the forefoot and toes. (G. P. B.)

Treatment of Congenital Wryneck.—F. SCHANZ (*Münch. Med. Woch.*, XLVIII., 42, 1901), considers congenital wryneck, stating that simple tenotomy of the sterno-cleido-mastoid muscle is sufficient to relieve the deformity provided the dressing be so applied as to prevent a subsequent contraction of the scar. Schanz does this by means of a thick cotton batting bandage which is so applied that the head is held in a position of extreme extension, the shoulder acting as a support. This dressing remains on six weeks, being strengthened by additional bandage from time to time if necessary. Care must be taken, however, that a paralysis is not produced by the pressure of the bandage on the nerves of the shoulder. (H. E. D.)

Three Cases of Paralysis of the Arm at Birth, with Remarks on the Relation of These Forms of Paralysis to Wryneck.—A. SCHUELLER describes three cases of paralysis of the arm, with remarks on its relation to congenital wryneck, in the *Wiener Klin. Wochenschr.*, No. 37, 1902. Illustrations are given. The first case was a breech, the second a forceps with extraction of the shoulder by means of Braun's Hook, the third a forceps. In all, the wryneck obtained on the same side as the paralysis. (G. P. B.)

Congenital Dislocation of the Hip.—The visit of Professor Lorenz to this country has inspired several articles and editorials on Congenital Dislocation of the Hip.

DR. RIDLON, in *New York Medical Journal* of October 25, 1902, gives the first authentic report of the history and treatment of the Armour child. Dr. Ridlon in 1900 reduced both hips; but the dislocation of the right recurred. The condition of the left was satisfactory when seen by Prof. Lorenz in Chicago. Prof. Lorenz reduced the dislocation of the right hip by the routine method employed by him.

The plaster dressing will remain in place until next May, when the child will be taken to Vienna, where manipulation and massage will be instituted. It would seem that rather a false idea of the ease of this method has been obtained. Dr. Edward Ochsner, in the *Annals of Surgery* for October, 1902, recounts in a report of a successful operation, the difficulties encountered by him in holding the head in place after reduction.

In the *Boston Medical and Surgical Journal* of October 23, 1902, an editorial pays tribute to Hoffa and his open operation, which preceded the method of Lorenz, and perhaps in a measure paved the way for it.

In the course of an editorial in the *Medical Record* of October 25, the difference between the forceful methods of Paci and Lorenz is explained as an improved position and nearthrosis in the former, and a complete reduction in the latter.

Christian Lange, in *Hospitalstidende* No. 34, reports two modifications of Lorenz's method of treatment. In unilateral dislocations he encloses not only the hip, but continues the plaster dressing up to include the lower part of the thorax. Secondly, he has tried with success the fixation of the femur at a right angle for a year, especially in those cases in which the acetabulum is poorly developed. The results are well classified, and finally the histories of twenty-six cases are detailed. (H. E. D.)

Operative Treatment of Flail Elbow.— In those cases in which the motion of the hand is not lost, but the forearm is useless, ROBT. JONES (*Brit. Medical Journal* of Sept. 6, 1902) attempts to bring the forearm to an angle somewhat less than right, in relation to the arm. The skin over the fold of the elbow is removed from a diamond shape area, and the upper angle of the wound stitched to the lower angle. The resultant scar tissue is depended upon to maintain the angle of correction.

Five cases are reported extending over two years with satisfactory results up to the present time.

In two cases in which the biceps and brachialis anticus were supposed to be completely paralyzed, power has returned as a result of the improved position. (H. E. D.)

Congenital Defect of Both Pectoral Muscles of the Left Side.—W. KOPFSTEIN (*Wiener Klin. Rundschau*, 1902, No. 33) describes a rare defect in a ten-year-old girl. This patient showed a membrane, consisting of a triangular duplication of skin extending from the breast to the upper arm, which made the raising of the arm both difficult and painful. The case was cured by plastic operation. (G. P. B.)

DERMATOLOGY.

Louis Frank, M.D.

Affections of the Skin from the Use of Aureol.— (*Dermatolog. Zeitschr.*, October, 1902, p. 603). Aureol, a new hair-dye recommended by Richter as perfectly harmless, is reported by Walters as having produced decided dermatitis in three cases, attended by itching and burning of the scalp, with formation of vesicles, pustules, and edema. The local process was followed by an erythema extending over the body, combined with inflammation of the fauces. the toxic action is probably due to Paraphenyl-Eudiamin-Chlorhydrat contained in aureol, which has produced similar symptoms in 18 cases reported by Cathélineu from Fournier's Clinic.

A Case of Arsenic Intoxication.—O. ROSENTHAL (*Dermatolog. Zeitschr.*, October, 1902, p. 609), reports a case in which about 4 grammes of arsenic had been taken in the form of pills and Fowler's solution during three months. The patient was very anemic, icterus also being present. Hearing was affected. General edema and hyperemia existed, the palms of the hands, soles of the feet, and the arms were covered with keratoses. The epithelium of the tongue and mucous membrane of the mouth showed whitish swelling. There was hoarseness, and the pupils were contracted. The pulse was 120 and very small. Thirst was enormously increased, appetite was wanting, and occasional diarrheas existed. Severe pains in the lower limbs, and great depression and prostration were present. Among the subjective symptoms were vertigo, pain while walking, and tingling in the hands and feet. Tremor and muscular twitching were also observed.

Two Cases of Malignant Vascular Tumor, (Perithelioma) of the Skin. PAUL G. WOOLEY and E. HAMILTON WHITE (*Jour. of Cutaneous and Genito-Urinary Diseases*, October, 1902, p. 453). The authors describe two cases of this rare affection, which, with but few exceptions, had been called endothelioma or angiosarcoma, no distinction being drawn between the endovascular or peri-vascular type. Case 1 was that of an Italian boy, 10 years old, with a small tumor on his great toe, dating from a blow received two weeks before. The growth was 1 cm. in diameter, bright red in color, bled readily, and had a short slender pedicle. Microscopically the growth consisted of vascular tissue with fibrous bands radiating from the center to the periphery and but little epithelium present on the surface. The majority of the vessels contained no blood cells; the small spindle-celled sarcomatous type prevailed in the center, and on the periphery the peritheliomatous type was most pronounced.

Case 2. The tumor, 1½ cm. in length, of a pinkish color, with some hairs, was situated on the scalp of a 3½-year-old child. As in the first case the growth was slightly pedunculated. No history of trauma was obtained. The appearance and structure were similar to Case 1.

Dermatological Cases (Zoster; Glossitis).—REICHMAN (*Jour. of Cutaneous and Genito-Urinary Diseases*, October, 1902, p. 460), describes the occurrence of herpes zoster menstrualis sacro-lumbalis in a French Canadian

female, aged 35, who had acquired syphilis through her husband. In 1900 there appeared an eruption on the mucous membrane of the mouth which yielded to specific treatment. For the last ten years, regularly, at the time of menstruation, an eruption of vesicles—attended by burning and itching—appeared in the left sacro-lumbar region. The group of limpid vesicles was the size of a dollar and (in November) symmetrical. Following treatment with arsenious acid (0,001 in pill form) the eruption appeared but twice more, unilateral, without further relapse. Similar cases are reported by Bergh and Levin. R. also describes a case of Glossitis superficialis chronica (Moeller). A poorly developed girl, 18 years of age, had suffered acutely for three years from an affection of the tongue. The tongue was coated brown, the tip, margins, and lower surface were covered with bright red papules of lentil size, also noticeable on the mucous membrane of the cheecks and lips near the angles of the mouth. A diagnosis of a mycotic infection could not be verified. The microscopic examination of a fresh papule showed enormous small cell infiltration with loss of epithelium, and proved it to be a case of glossitis. Strong lactic acid application and a huckleberry decoction were without effect. Decided improvement followed upon the systemic treatment of the anemia.

Treatment of Eczema with Naftalan.— AWERBACH (*Monatshefte f. pract. Dermatolog.*, October, 1902, p. 357) Naftalan, a product of red nafta obtained through distillation, is an efficient remedy for eczema in certain selected cases, especially in acute forms, artificial inflammatory conditions of the skin, or chronic eczema with acute exacerbation. It has no irritating qualities and acts as a sedative, mitigating pain and itching and rapidly drying the discharges; its odor is not disagreeable and no stains are left on the clothing.

SYPHILIS AND GENITO-URINARY.

L. Schiller, M.D.

An Unusual Location of a Primary Sclerosis. This is reported by A. ARNHEIM (*Unna's Monatshefte für Praktische Dermatologie*, Vol. 35, No. 6). It was situated on the right side of the upper lip and began as a papule, which gradually enlarged until at the end of three weeks it had assumed the size of a 5-pfennig piece, not involving the mucous membrane. The submaxillary and cervical glands were enormously enlarged. This patient had not cohabitated, but was a frequent visitor at restaurants with female attendants. He remembered that four weeks before the first appearance of the primary lesion he had been kissed and at the same time bitten in the mustache by one of these waitresses. The author was not able to examine the girl in question, but has no hesitancy in considering this the origin of the infection.

Observations on the Use of Iodipin.— ERNST J. FEIBES-AACHEN (*Dermatologische Zeitschrift*, 1902, No. 2-4), observes that by far the greatest amount of iodine after the ingestion of iodipin is excreted by the kidneys, a relatively large amount is eliminated with the saliva, a very small amount with the fæces, while none at all is thrown out through the agency of the perspiration. The author's results speak very highly for the use of a 25 per cent. solution of iodipin hypodermatically administered. He finds it especially serviceable in the precocious and malignant forms of the disease, syphilis of

the rectum, and in those cases in which in spite of the usual treatment conscientiously carried out we get frequent recurrences of mucous patches, roseola, etc. From results obtained he concludes that iodipin administered hypodermatically and in large doses will be found equal if not superior to iodide of potassium.

Two Cases of Extragenital Syphilis.— DR. J. S. GOULADZE, of the Militaer Hospital at Warschau, reports (*Dermatologisches Centralblatt*, 1902, No. 12), a case of extragenital syphilis, and makes the assertion that in Russia the cases of extragenital syphilis are becoming more and more numerous, and that the time is not far distant when these cases will constitute fully 25 per cent. of all cases.

In his particular case the question as to the actual source of infection arises, namely—whether the chancre of the lip was produced by smoking cigarette stumps or by kissing prostitutes, the patient having denied having had intercourse with any of these women.

ROENTGEN-RAY THERAPY.

A. W. Myers, M.D.

The Influence of the Roentgen Ray Upon the Different Varieties of Sarcoma.— COLEY (*American Medicine*, August 16, 1902), reports upon fourteen cases of sarcoma treated by Roentgen Ray. Of these eight were either cured or were improving under treatment at the time of the report. The cases which may be considered cured were four in number: an extensive round-celled lympho-sarcoma of the neck, pectoral region, and axilla, of two years' duration; a small round-celled sarcoma of the pectoral region of three years' duration, in which improvement occurred only when the mixed toxin treatment was used in conjunction; a small round-celled sarcoma of the back, of fairly rapid growth in a child of eight years; and a small round-celled sarcoma of the neck of slow growth, six times recurrent, in which treatment by the mixed toxins had been unavailing.

Among the cases improving under treatment at the time of the report were two in which the mixed toxin treatment had failed, an osteo-sarcoma of the mastoid and temporal regions, and a recurrent small round-celled sarcoma of the superior maxilla; while in a slowly growing small round-celled sarcoma of the gracilis, the improvement became marked only after the toxins were used.

In a round-celled sarcoma of the femur of rapid growth, a rapidly growing round-celled sarcoma of the fascia of the thigh, a rapidly growing round-celled sarcoma of the parotid, a rapidly growing spindle-celled sarcoma of the abdominal walls, a spindle-celled sarcoma of the upper jaw, of three years' duration, and a recurrent melanotic sarcoma of the iliac glands of five years' duration, improvement was only temporary, or was entirely absent.

In all cases the apparatus used was a twelve-inch coil, with fairly high tubes, the usual distance being eight to ten inches, and the time of exposure from ten to twenty minutes, usually four or five times a week.

His conclusions are: (1) That the results in the cases thus far treated prove that the Roentgen Ray has a remarkable inhibitory action upon the growth of all forms of malignant disease, and that this is especially true of sarcoma. (2) That this action, in many cases of even far advanced and

inoperable malignant disease, may result in the total disappearance of the tumors, often without any breaking down of the tissues, the new growth being apparently absorbed. (3) Whether the patients have been cured, or the disease has been merely arrested, to reappear at some future date, is a question that time alone can decide. (4) Recent observations and experiments upon the various forms of carcinoma and sarcoma prove that an agent supposed to be of value only in a very limited class of superficial epitheliomas, promises to be of as great, or even greater value, in practically every variety of cancer. (5) While at present there is little evidence to show that deep-seated tumors in the abdomen and pelvis can be cured or benefited by the Roentgen Ray, there is still some reason to hope that with improved apparatus, or with greater knowledge and skill in using the apparatus that we now have, even these cases may be benefited. (6) The Roentgen Ray has a very marked influence upon the pain of nearly all types of malignant tumors, causing entire relief in many cases.

The X-Ray.—FRANKLIN (*Med. Record.*, October 25th, 1902), states the differences in the effects produced by the coil on the one hand and the static machines on the other, as follows: In the former a spark is produced every time the primary circuit is interrupted; and in the latter a spark is produced every time enough electricity is accumulated to overcome the resistance in the circuit. From this it follows that the rate of discharge in the case of a coil will be the same for any tube, while the quantity of current passing in a tube of low resistance will be greater than in the higher tube; but in the case of a static machine the rate of discharge will regulate itself to the resistance of the particular tube that is placed in the circuit, and, therefore, the amount of current for a given tube will be constant at all times.

He suggests that this may account for the greater danger of burns from coils which some observers have reported. The manner of its action upon the tissues is still in much doubt, just as is the nature of the X-Ray itself. The most generally accepted theory is that the rays are composed of negatively charged corpuscles, or electrons.

Results of Treatment of Laryngeal Cancer by X-Ray.—DELAVAN (*Med. Record*, October 18th, 1902), reports that a search through the literature so far has not revealed any cases of carcinoma of the larynx which have been cured by X-Ray treatment. He reports one case of laryngeal cancer in a man of 65, in which marked improvement of the local conditions occurred. After 18 exposures treatment had to be abandoned on account of the general condition of the patient, who died shortly afterward from Bright's disease.

On the Dosage in Radio-Therapy.— HOPKINS (*Phila. Med. Jour.*, September 27th, 1902), lays particular stress upon the necessity for arriving at definite dosage in the treatment of disease by the Roentgen Ray. The difficulties in the way are the great variation in tubes, even from the same maker, and the variations in the energizing machines. A tube will vary less in hardness, and will last longer when energized by a static machine than when a coil is used. A search of the literature shows that tubes energized by a static machine current have much less to answer for in the way of burns than have those energized by a coil.

At a meeting of the New York State Medical Association, held October

20-23, several interesting papers on X-Ray subjects were presented. Allen reports 50 cases of cancer, mostly epitheliomata of the rodent ulcer type, treated by means of the X-Ray, with over 50 per cent. of cures. In only 8 per cent. of the cases was the final result unfavorable.

For cancer of the genital tract Delphey advises the removal of as much as possible of the cancerous material by operation, and then treatment by means of the X-Ray.

Coley, speaking from an experience with 68 cases treated at the General Memorial Hospital, says that some good results were obtained, but that recurrences after the cessation of treatment were not unusual.

In regard to the usefulness of the X-Ray to the obstetrician, Cook said that the ordinary methods of examination gave results quite as good as those obtained by the use of the X-Ray. No trace of the fœtus could be seen before the fifth month, therefore they could not be used in the diagnosis of early pregnancy. Twin pregnancy might, however, be easily demonstrated by this method in the later months.

HYGIENE AND PUBLIC HEALTH.

U. O. B. Wingate, M.D.

Recent Studies of Immunity.—In his admirable Huxley lecture (*The Medical News*, Oct. 18, 1902) before the Charing Cross Hospital Medical College, PROF. WM. H. WELCH makes the following very interesting statements concerning the advances made in immunity:

"The deeper insight which we have recently gained into the nature of the forces concerned in immunity makes especially desirable the systematic study of the blood and other fluids of human beings in health and in disease with reference to their content of specific anti-bodies, particularly of the bactericidal substances. It can scarcely be doubted that knowledge of this kind will be in various ways of practical value to the physician and surgeon. The simplest procedure, and the one hitherto generally adopted, is the estimation of the bactericidal power of the blood-serum in toto. For this purpose Professor Wright has devised an ingenious method which in his hands has furnished extremely interesting information concerning variations in the bactericidal power of the blood as regards the typhoid bacillus in health, under the influence of fatigue, in the course of typhoid fever, and after antityphoid inoculations. The older methods, however, while not without value, do not inform us of the total content of the blood in immunizing substances, and have led to very discordant results, particularly as to the influence of infection upon the bactericidal power. Thus Conradi finds, in opposition to most previous experimenters as well as to the later results of Wilde, that infection with the anthrax bacillus does not at any stage influence materially the bactericidal properties of the blood."

"We know that the content of the blood in specific anti-bodies, and especially in complements, varies in significant ways under diverse conditions, as in infancy and in adult life, in health, in different states of nutrition, under the influence of fatigue, of inanition, of pain, of interference with expiration, of alcohol, and in disease. The infant comes into the world with protective anti-bodies in its blood, smaller in amount and less energetic than

those possessed by the healthy adult. It is an important function of the mother to transfer to the suckling through her milk, immunizing bodies, and the infant's stomach has the capacity, which is afterward lost, of absorbing these substances in an active state. The relative richness of the suckling's blood in protective anti-bodies, as contrasted with the artificially fed infant, explains the greater freedom of the former from infectious diseases."

Diagnosis of Smallpox.—WANKLYN (*Brit. Med. Jour.* July, 5, 1902) makes some very interesting suggestions concerning the diagnosis of smallpox as it exists in the modified form of the present epidemic. In the first place he places no value on the history of the patient and claims that accurate histories are rare, and even when they are accurate they may be misleading. Again, age is not to be regarded as influencing the diagnosis. He finds that vomiting, high temperature, and sacral pain are uncommon in varicella. He also draws attention to the great prostration which practically always exists in the primary fever of smallpox, and which is indicated by the "expressionless faces and the settled aspect of fatigue and inattention." On the other hand, a patient who, together with an abundant rash, presents an alert expression and acute mentalization, is almost certainly not a case of smallpox. WANKLYN regards the distribution of the rash as the most important element of diagnosis. He claims that it is not very generally known how consistently chicken pox eruption spares the forearms and hands. This is, of course, speaking relatively, as varicella spots are found occasionally both on the hands and feet. As regards the character of the rash, he considers "the shotty feeling" and the "umbilication" of the smallpox spot as broken reeds to trust to. Those who have had much experience in the diagnosis of smallpox will agree with him here as these features in some cases of undoubted smallpox are entirely absent, and most frequently of all absent in cases of varioloid, the very cases which give us the greatest difficulty in diagnosis. The true distinction between the eruption lies in the depth in the skin in which the lesion is placed. In varicella the rash is superficial as is shown by the thinness of its pellicle and the irregularity of its outline. WANKLYN also notes the well known point of diagnosis by examining a certain area of skin, and noting whether the lesions in it are all in the same stage. In chicken pox this is not the case, all stages co-existing at the same moment.

The Danger of Milk from Tuberculous Cows.—PROF. ED. NOCARD (*The Sanitary Record* for October, 2, 1902) in his speech delivered at the 19th Sanitary Congress, Manchester, England, this year, takes up the subject of tuberculosis in the bovine race and the question of the communicability of tuberculosis from animals to man. He says: "At the London Congress last year Prof. Robert Koch denied the reality of this danger. His communication resolved itself into these two declarations: (1) Bovines are refractory to human tuberculosis. (2) All measures taken to protect man from bovine tuberculosis are unnecessary."

Prof. Nocard proves by citing scientifically recorded facts that both of Koch's propositions are erroneous.

The Significance of Bacillus Coli in Drinking Water.—In an exhaustive article on the above subject (*The Journal of Hygiene*, July, 1902) WM. J. SAVAGE, B. Sc., M. D. (Lond.) concludes as follows:

1. "In estimating the significance of *B. Coli* in a sample of water the particular kind of water must be carefully considered, also the exact part of the system from which the sample is taken.

2. The number of *B. Coli* present is an essential factor, but arbitrary standards of the number of this organism allowable per litre are of but little value and are fraught with considerable possibilities of error unless the particular kind of water and the local conditions are considered in every case.

3. Waters which show no *B. Coli* in 50 c. c. are of a high degree of purity, and therefore the proved absence of this organism in this amount, and still better in larger quantities, is of great value.

4. *B. Coli* should be absent from at least 50 c. c. of spring water, possibly from greater amounts.

5. In upland surface waters the presence of *B. Coli* in 40, 10 or even 2 or 1 c. c. means contamination, but not necessarily a contamination which it is essential to prevent.

6. If *B. Coli* are present in numbers greater than say 500 per litre (or even in that amount) such a water is suspicious.

7. In surface wells *B. Coli* in large numbers indicate surface or other contamination generally very undesirable if not actually dangerous. A knowledge of the position and the possibilities of contamination is very desirable in giving an opinion as to the purity of the water.

REPORT OF WISCONSIN BOARD OF MEDICAL EXAMINERS.

Following is report of examination held at Oshkosh, Oct. 14, 15, 16, 1902:

NAME OF COLLEGE.	NO. OF APPLICANTS.	PASSED.	FAILED.
Univ. of Pennsylvania	1	1	..
American Med. Missionary College, Chic	1	1	..
Chicago Med. College	3	2	1
Chicago Hom. Med. College	2	2	..
Univ. of Louisville, Ky	1	1	..
Univ. of Munich	1	1	..
Marion-Sims Beaumont Col. of Med	2	2	..
Rush Medical College	5	5	..
Johns Hopkins Univ	1	1	..
Louisville Med. College	1	1	..
College of Phys. & Surgs., Chicago	2	2	..
Bennett Med. Col., Chicago	1	1	..
Still College of Osteopathy, Mo	1	1	..
Harvey Medical School, Chicago	1	..	1
Hahnemann Med. College, Chicago	2	1	1
Illinois Med. College	1	1	..
Am. School of Osteopathy	1	1	..
Total	27	24	3

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SOME OF THE COMPLICATIONS AND RESULTS OF DENTAL INFECTIONS.*

By C. A. HAMANN, M.D., Cleveland, O.

The object of this paper is to set forth some of the results of infections starting in or about the teeth. The subject is one which is of interest to the general practitioner and surgeon alike, for diverse pathological conditions have their origin in the teeth.

As the cause of these pathological processes we have caries of the teeth and suppuration in their neighborhood. The cavities in their interior and the surrounding tissues serve as infection atria, at which the micro-organisms and their products enter the system. It goes without saying that deleterious substances may also be swallowed and contribute in the causation of many cases of gastric and intestinal disturbances. To these latter I shall make no further allusion, as my aim is to consider rather the surgical complications of dental caries.

A very common abnormal condition of the mouth is that of gingivitis, associated often with the presence of pus in the sockets of the teeth—pyorrhoea alveolaris, in other words. In persons who neglect the proper care of the teeth, (and their number is legion), the accumulation of the so-called tartar and the decomposition of food particles in time lead to an inflammation of the gum, and later to suppuration. When we examine such persons, who are usually at or beyond middle life, we find a reddening of the mucosa, and if we press the gum against the tooth, droplets of pus will be seen to exude. Sometimes the fangs of all of the teeth are thus bathed in pus. In time the gum recedes, the fang becomes exposed, and ultimately the teeth fall out. It can hardly be doubted that this chronic suppurative

* Read before the "Medical Tribunal," Alliance, O., Oct. 31, 1902.

process is injurious to the general health. However, when we consider how frequent such cases are, it is remarkable that more disturbances are not seen. It has been shown that chronic septico-pyaemia is at times due to the condition mentioned, and doubtless not a few of the cases of so-called "crypto-genetic septico-pyaemia" are to be attributed to pyorrhoea alveolaris. I have seen intense ulcerative stomatitis, diffuse submaxillary suppuration, and thrombosis of the cavernous sinus originate in pyorrhoea alveolaris. If you have not already done so, permit me to suggest that you examine your patients for this suppurative affection about the fangs of the teeth; you will be surprised at the frequency with which it is encountered.

It may be mentioned that diabetes mellitus has been met with in cases of pyorrhoea, and some dentists have tried to establish a causative relation between the two affections. It seems hard to believe that such is the case, however, and I think it is merely a coincidence.

The treatment of pyorrhoea alveolaris devolves upon the dentist, and will not be further described in this paper. Suffice it to say that energetic measures are necessary, and a long period of time usually elapses before benefit is obtained, indeed, in advanced cases a cure is out of the question.

From the suppurating sockets of the teeth—in cases of the above affection—there may be infection of the submaxillary glands and of the loose submucous tissue in the floor of the mouth, what in other words is known as "Ludwig's angina," or as it is better called, diffuse submaxillary cellulitis. This condition may be caused by infection from any septic focus in the mouth or pharynx. A common cause is found in tonsillar and peritonsillar inflammation. The affection is characterized by diffuse swelling and brawny edema in the submaxillary region, extending at times over the entire side of the neck and even to the opposite side. Suppuration nearly always occurs. There is danger of edema of the larynx. An early incision is, as a rule, advisable.

Carious teeth in children are, according to carefully collected statistics, a very common point of entrance for tubercle bacilli, which, entering the lymph channels, are carried to the submaxillary lymph glands. The great frequency of tubercular lymph glands in the neck in children is partly due to the prevalence of dental caries and to the greater susceptibility of the lymph glands of young persons to tuberculosis.

Actinomycosis of the mandible, though not a common condition, owes its origin to infection originating in the teeth.

Empyema of the antrum of Highmore is frequently caused by carious teeth and by injuries sustained in their extraction.

The common alveolar abscess is the result of infection from the teeth. The well-known symptoms and signs need not be given here. It is remarkable how many dentists allow carious teeth, the cause of this condition, to remain, refusing to extract them "till the swelling goes down." There could be scarcely a more irrational procedure; the diseased tooth is certainly at the bottom of the trouble and should be gotten rid of.

A most serious result of dental infection is the one next to be mentioned, namely, thrombosis of the cavernous sinus.

In the three cases of this disease which I have seen the process originated in diseased teeth.

In order to understand the route traversed by the infectious process it is necessary to briefly allude to some anatomical details.

The veins returning the blood from the teeth join with others to form the pterygoid plexus, which is situated in the fat of the cheek, and in the pterygo-maxillary region, i. e., around the internal and external pterygoid muscles. This plexus communicates with the cavernous sinus by means of small veins which pass through the base of the skull:—there is usually one passing through the foramen Vesalii, and others through the foramen ovale and foramen lacerum medium.

The plexus furthermore is in direct communication with the facial vein, and this with the ophthalmic which empties into the cavernous sinus. There is, accordingly, a venous connection between the teeth and peri-dental structures and the cavernous sinus, and it is along this path that the infectious material gains access to this sinus; there is, in other words, a septic thrombophlebitis, the results of which are, probably in all cases, fatal.

The symptoms can be best brought out by the report of several cases.

A man, aet. 35 years, was admitted to the hospital on June 6th, 1902. He had an extensive pyorrhoea alveolaris, involving all of his teeth. The mouth was in a very filthy condition. There was a diffuse swelling in the submaxillary region on the right side, extending across the median line of the neck; the right side of the face was also swollen. He had an evening temperature of 102° to 103°. His mental condition was clear. There was some difficulty in swallowing. A couple of incisions on the right side failed to evacuate any pus. In a few days pus was evacuated from the left parotid region; the pus contained an abundance of streptococci. His condition grew worse. On the morning of the 27th, i. e., 13 days after admission, he had double exophthalmos, with marked chemosis. The left eye had

been observed to be slightly prominent on the evening before. It was now quite evident that he had a septic thrombosis of both cavernous sinuses, the one on the left side having been first involved, and the clot extended across to the right sinus by way of the circular and transverse sinuses. As the ophthalmic veins empty into this sinus, the interference with the return flow of the blood led to the exophthalmos. Delirium soon supervened, and death occurred on June 30th, 16 days after admission.

At the autopsy, both cavernous sinuses were found to contain suppurating thrombi, as did also the ophthalmic veins; there was pus in the right orbit, and at the base of the brain.

Another patient, a man aged 40 years, whom I saw in consultation with Dr. W. E. Bruner, had had an upper molar extracted about a week before. An alveolar abscess had formed and his face was swollen. The right eye was very prominent. He had a high evening temperature (104° to 106°) with morning intermissions. In a few days the other eye became prominent, and the diagnosis of sinus thrombosis was confirmed. He lived about a week.

The supervention of exophthalmos on the side opposite the one first affected is quite characteristic of cavernous sinus thrombosis, and is readily accounted for by the above mentioned communication of the two sinuses. Of course, the supervention of sinus thrombosis in an infectious process about the jaws is necessarily fatal; nothing can be done for it.

One would naturally suppose that osteomyelitis of the jaws would be comparatively common as a complication of dental caries, alveolar abscess, and consequent upon extraction of the teeth. Yet it is rare, and I have seen but one case.

The patient was a man aged 32 years, referred to me by Dr. Price, of Kent. Three weeks before admission to the hospital he had had a lower bicuspid extracted; the jaw became swollen, an abscess burst into the mouth. The lower jaw was considerably thickened in almost its entire extent; an incision had evacuated pus. Exposed bone could be felt. He had some fever. The adjacent teeth were loose. I operated upon him three different times, and finally had the interior of the bone exposed for the entire length of the body of the jaw; the canal was found to be filled with pus, and pieces of bone were removed. A parotid abscess also complicated matters. After about a month it seemed that the suppurative process had been checked, for the swelling had subsided, there was little or no pus, and his temperature was normal. Evidences of cerebral disturbance, however, appeared—aphasia, paresis of the right arm, stupor, and finally convulsions. Death occurred nine weeks after extraction of the tooth.

In the diffuse form of osteomyelitis, as in the above case, the danger of a fatal termination is grave. Cases in which the inflammation is circumscribed are more apt to recover.

Köhler has collected twenty-four cases, of which eleven were due to extraction of teeth. The eruption of a wisdom tooth may be associated with osteomyelitis.

The diagnosis of osteomyelitis is based upon the history of the case, upon the thickening of the jaw, the presence of pus, the loosening of the teeth, the recognition of necrosed or bare bone with the probe, and finally upon the constitutional signs of sepsis. Needless to say the treatment consists in free incisions to evacuate the pus. It may be necessary to open the inferior dental canal upon both sides. Necrosed bone should not be removed till it has separated spontaneously, and the protecting newly formed bone is strong enough to withstand the demands made upon it.

In conclusion permit me to again enumerate the main consequences of infection from the teeth:

(1) Tuberculosis of the cervical glands.
(2) General septicaemia.
(3) Diffuse submaxillary cellulitis, or Ludwig's angina.
(4) Thrombosis of the cavernous sinus.
(5) Osteomyelitis of the maxillary bones.

POISONING BY NOXIOUS GASES.*

By W. C. BENNETT, B.S., M.D.

REGISTRAR OF VITAL STATISTICS, MILWAUKEE.

While there are many gases which may, and have produced violent symptoms, and even death by being inhaled, the number which have more than occasionally caused death is few. To enumerate: the gases or vapors which we find referred to in works on Toxicology, as having rarely or frequently produced death, are as follows: chloroform, ether, the halogens—chlorine and bromine, the halogen acids—hydrochloric and hydrofluoric, the volatile elements—arsenic and phosphorus, the gases hydrogen sulphide, ammonium sulphide, carbon disulphide, hydrocyanic and nitric acids, ammonia, carbon monoxide, and carbon dioxide.

In cases of poisoning from the inhalation of gases serious symp-

* Read before the Milwaukee Medical Society, February 24, 1903.

toms may be due to, or death result from one or more of five factors, operating simultaneously or consecutively.

The first of these factors is an irritation as a result of which the mucous membrane of the respiratory passages becomes inflamed and edematous, and the injury thus caused destroys or renders unavailable (temporarily at least) sufficient absorbing surface of the lungs to allow the proper æration of the blood.

Second—A gas which is non-irritating may be present in such quantity as to prevent the proper oxygenation of the blood, for if the oxygen in the air is reduced much below the normal, the conditions of life become impossible. An example of a gas producing such a condition is found in CO_2 which is non-poisonous and non-irritating, yet frequently produces death.

The third factor in the production of serious consequences is the action of a gas on the blood, whereby the oxygen-carrying power of the blood is destroyed, owing to a displacement of oxygen by the foreign gas, as for example, CO.

Fourth—The hemoglobin may be decomposed and dissolved in the blood plasma, and this condition might produce death from the non-function of the hemoglobin, or from the formation of toxic decomposition products. Oxygen in itself, in excess, will produce this condition. According to Harrington: "In an artificial atmosphere containing an excessive amount of oxygen, the hemoglobin becomes saturated with the gas, part of which becomes dissolved in the blood serum, and then acts as a poison to the tissues and kills them." (Practical Hygiene, p. 208.) Such a gas is nitrogen tetroxide which is formed when the fumes of nitric acid come in contact with organic substances, or with the air.

Fifth—Is the inhalation of a gas which is taken up by the blood and carried—possibly with very little change—directly to the nerve centers, where its chief effect is produced. Such a gas is HCN.

Although we may think of gases operating in a simple manner as described, it is probable that any given gas, or mixture of gases usually operates in two, or three or more of the ways mentioned. In studying and treating cases it should be remembered that the symptoms will vary according to the preponderance of action of one or other of these factors.

CO poisoning is particularly liable to show a great variety of symptoms in different cases, because it is inhaled under very varying conditions. It is usually combined with carbon dioxide, as in the French method of suicide by inhaling charcoal fumes. Variable amounts of nitrogen, oxygen, and methane or marsh-gas are mixed

with carbon monoxide in illuminating gas, and in coal gas or "stove gas."

Finally, the conditions which produce CO also produce a deficiency of free oxygen, and at times the free oxygen may be reduced very greatly, as was probably the case in the "Brewery-vat" cases in 1898.

In addition there must also be taken into consideration a toleration acquired from previous exposure, and possibly a natural immunity, which, while difficult to account for, has been observed often enough to make its existence a certainty. While CO especially when combined with CO_2 may act deleteriously simply as a diluent of the air, its best known action, as was said before, arises from its powerful chemical affinity for hemoglobin.

The less well-known and understood action on the nerve centers has been remarked by unquestioned authority. It would be unnecessary to cite the familiar example of death from chloroform or ether, so well known to you all.

The volatile halogens and their volatile acids are intensely irritating, and it is surprising that no more deaths have occurred from them.

A well known authority, in searching the literature upon the subject, was able to obtain records of only 8 cases in which death resulted from the inhalation of chlorine, one of bromine, and two from hydrofluoric acid, and he states that HCl taken by inhalation has no forensic interest. As might be supposed these few cases have occurred among chemists.

The fumes of arsenic, phosphorus, mercury, carbon-bisulphide and nitro-benzine, usually produce chronic poisoning and need not be taken up.

Ammonia has caused death in a few cases in operators about ice machines on account of its extremely irritating action.

Hydrogen sulphide and ammonium sulphide may also produce death when inhaled in a concentrated form, but instances are rare. Hydrocyanic acid, which acts on the central nervous system and later upon the entire nervous system, has occasionally produced death from the inhalation of the gas, but by far the most common means of death is from swallowing the acid or its potassium salt.

Death from nitric acid is not very common. Whithouse and Becker give so clear and concise an account that I quote this authority in full:

"Nitric acid has in several instances been indirectly the cause of death. When the acid is exposed to the air, or, more rapidly,

when it is in contact with organic matter or with metals, it is partly volatilized and partly decomposed with the formation of the oxides of nitrogen, particularly of nitrogen tetroxide. The fumes or vapors thus given off are brown in color and are actively poisonous, being particularly dangerous because of the comparatively slight discomfort which they produce at once when inhaled. We have met with the records of 22 cases of poisoning by the inhalation of such fumes, of which 15 caused death in from 10 to 40 hours, the average duration being 22 hours. In 14 cases, 11 of which were fatal, the poisoning was due to an attempt on the part of the deceased to repair the damages caused by the breaking of a vessel containing the acid, or by its having been otherwise spilled out.

Symptoms: no effects save a trifling irritation of the air passages are felt from 2 to 4 hours, if we except the temporary feeling of suffocation experienced at the time the vapors are but slightly diluted with air. There is then a sense of uneasiness in the chest, pain on inspiration and coughing. The face is pale, lips cyanosed, the forehead bathed in cold sweat, the extremities cold and the pulse weak. The respiratory organs are the seat of very acute hyperemic inflammation of the bronchial mucous membrane, which is at first limited to the larger tubes, but rapidly extends to the finest bronchi. The sputa are lemon yellow to dirty gray in color, tenacious, adherent to glass, alkaline in reaction, and contain a few pavement and columnar epithelial cells, innumerable nuclei, large numbers of red and white corpuscles, and groups of yellow, non-refracting pigment globules which exhibit a Brownian movement.

Vomiting occurs but rarely, and pain, which is in some cases intense, is not epigastric, but thoracic. The urine is normal. In fatal cases the dyspnea increases sometimes after marked remissions, coarse râles are heard all over the chest, and death occurs with all signs of acute pulmonary edema. Recovery is slow and occupies two weeks.

Post-mortem appearances: the most marked changes are found in the thoracic organs. The pleuræ are adherent over more or less of their extent. The lungs are extremely hyperemic, and their tissue is extensively disorganized, saturated with black fluid blood, presenting a spleen-like appearance on section, and non-crepitant except in a few places. The cavities of the heart, particularly those of the right side, are distended with black blood, partly fluid and partly imperfectly coagulated, and a similar material fills the great vessels. The mucous membrane of the trachea and bronchi is more or less reddened. The stomach is distended with gas, contains a small quantity of fluid, which may be strongly acid in reaction, and its mucous membrane is inflamed, thickened, and stained yellow in places. The veins of the pia-mater and the arteries at the base of the brain are distended with dark-colored tarry or fluid blood."

From the above it will be seen that bringing any organic substance, as sawdust, in contact with nitric acid, furnishes the best possible condition for the production of nitrogen tetroxide.

REPORT OF A CASE OF ACUTE CAPILLARY BRONCHITIS CAUSED BY THE INHALATION OF NITRIC ACID FUMES.*

By T. L. HARRINGTON, M.D., Milwaukee.

The recent fire in the Schwaab plant, caused by the breaking of a carboy containing nitric acid, and the disastrous consequences, resulting in the death of Milwaukee's fire chief and three of his brave subordinates, and in the serious and almost fatal illness of five other members of the department, is a fact fresh in the minds of all.

The wild and extravagant speculations as to the cause of death, the senseless and groundless suggestions as to the proper treatment, and the dire prophesies as to the ill health and the early death of those who escaped from the immediate effects of the nitric acid fumes, all combine to make this a fruitful subject for discussion before this society.

I can best put you in a position to understand the subject by repeating to you Captain Lancaster's story as he told it to me.

"The fire, which occurred at 2:16 on the afternoon of Tuesday, Feb. 3, was in the center of the third floor of the Schwaab plant. I passed Chief Foley on the stairway, and found Captain White shoveling up the sawdust which had been thrown over the acid. The smoke that came from it was of a heavy yellowish-brown color, and very stifling. Captain White handed me the shovel and moved back to the stairway to get some air. The smoke got so thick that I was forced to drop on my hands and knees for a time and put my face close to the floor to get air. That is how my hands got this color. (His hands showed the brown nitric acid stain.) We shoveled the sawdust into barrels and boxes, and emptied them into the alley.

On returning to the engine-house, I felt no bad effects from the fire. At 3:26 we answered another alarm. It was snowing, and the fire lasted about forty minutes. At 7:15 I went to supper, felt poorly, was very tired and ate but little. Shortly after returning to the engine-house I went to bed, but was restless and could not breathe well, and soon got up and sat near the stove. I had no chilly feelings, however. At 9:30 we answered a third alarm. It was storming badly, and the fire was a bad, smoky one lasting about forty minutes. 'Twas here poor Droney fell exhausted, and we sent him home.

When I returned from this fire, I felt oppressed and could not sleep. I sat near the stove till six in the morning when one of the boys came down. He said I was talking 'queer' so they took me to bed, and I have no clear recollection of what happened from that time till Friday morning."

* Read before the Milwaukee Medical Society, February 24, 1903.

I saw Captain Lancaster for the first time on Wednesday, Feb. 4, shortly before noon. At that time his temperature was 100½ degrees, pulse 100, full and strong, and respirations 40. He was mildly delirious, but could be aroused sufficiently to answer questions and recognize his acquaintances. He said he suffered no pain but there was a tightness across the chest, and in his delirium he would grasp his shirt and try to tear it from his breast.

During the next forty-eight hours his temperature did not go above 102 degrees. His pulse gradually increased to 140, and for a time was very irregular, dropping every second or third beat. His respirations rapidly increased in number, till they reached 84 at nine o'clock Wednesday night. All the accessory muscles of respiration were brought into play, and the body was covered with perspiration, probably due to the great respiratory effort necessary to supply oxygen to the blood. He coughed considerably, a dry, rasping cough, but occasionally spit up some tenacious mucous, which was not blood stained. There was inability to pass urine, but on analyzing the urine after catheterization, it was found to be almost normal. Specific gravity 1028, reaction acid, no sugar, no albumin, no casts. The bowels were moved by enema, and nothing abnormal was found over the abdominal cavity.

On careful examination over the chest cavity, increased dulness was perceptible over both lungs, but there was no area of absolute dulness. Auscultation revealed countless mucous râles over every portion of both lungs. The heart was normal in outline and position.

This leads us to a consideration of the pathology of the condition, and as no post-mortem was held on any of the men who died, we cannot speak in absolute terms of the pathology. However, a consideration of the gases inhaled, together with the symptoms manifested, and I learn that the symptoms were quite similar in all of the cases, makes us reasonably certain of our pathology.

The nitric and nitrous oxides coming in contact with the delicate mucous membrane of the lung must necessarily act in one of two ways, either as a caustic to the epithelium or as a violent irritant. If the action was that of a caustic, the albumen must have been coagulated and the epithelial cells would immediately become functionless. That this was not the case with Captain Lancaster, I am convinced, nor do I believe it to have been the case with those who lost their lives. The first symptoms developed in Captain Lancaster's case some five or six hours after the exposure. Captain White, I am informed, did not manifest the first symptoms for about three hours after the exposure, and Chief Foley was not taken sick till between

seven and eight in the evening. If there was a caustic action, with resulting loss of function, on any considerable portion of the respiratory surface, the dyspnea would have manifested itself immediately. Again, if the lung surface were burned and recovery took place, the convalescence would be slow, as it is after a burn on any part of the body. But in Captain Lancaster's case the temperature returned to normal within seventy-two hours, and the râles disappeared from the lungs within a week. I think then we may safely say that the action of the inhaled gases was that of a violent irritant, producing in the lungs a most violent capillary bronchitis, with its train of symptoms, and with its complications.

Let us pass now to the treatment. Briefly speaking, it was symptomatic. Heroin in 1/12th grain doses controlled the cough, but seemed absolutely to have no quieting effect on the restless delirium. Ammonium carbonate was used in five grain doses every three hours as a stimulating expectorant, and for its action on the heart. Strychnine, digitalin and nitroglycerine were used in heroic doses, and the effect on the heart was most gratifying. Champagne was given freely —three pints in thirty-six hours, and the patient took it readily. The restlessness was partly controlled by means of chloralamid. Eight grains by the mouth, once in two hours, quieted the patient somewhat, but a great deal of strength was wasted in the restless delirium, yet I feared to use morphine to quiet him. The lungs were filled with a tenacious mucous, and I feared that the patient would drown in his own secretions. Not till nine o'clock on Thursday night did I venture to use morphine, and then in a dose of 1/20th grain. I gave it hypodermically with the heart stimulants, and the result was most happy. The patient went into a quiet sleep, and slept nearly three hours.

But of all my therapeutic agents, oxygen did me the best service. And because the use of oxygen has been questioned in so many quarters, I shall discuss its effects quite fully. At nine o'clock Wednesday evening the respirations were eighty-four. All the muscles of respiration were making a mighty effort to bring oxygen to the blood. Each gasp for air could be heard fully fifty feet from the patient's bed. I had given atropine with the hope that it might lessen secretions and stimulate respiration. It gave no appreciable results. I felt sure that the patient could not long withstand such odds in his struggle for life. I remembered that atmospheric air contains about twenty-one parts of oxygen and seventy-nine parts of nitrogen. If we could bring pure oxygen to the lungs, how much more would they take up. From the amount of mucous in the lungs and the con-

gestion there, it was evident that the working power must be reduced to less than 25 per cent. Is it then not rational to increase the percentage of oxygen going to the lungs? We did that, and let us note the result. At 9:38 according to the nurses' chart, oxygen was given for eight minutes. Respirations were then eighty-two, and inside of five minutes they dropped to seventy-six. That was not all, for the restlessness quieted and the patient slept for about thirty minutes. Toward the end of this sleep the respirations again increased to eighty, the condition designated "air hunger" by the Germans manifested itself, and he grew more and more restless till the oxygen was again given. After the next inhalation, which lasted eight minutes, the respirations dropped to seventy, and he had another nap lasting twenty-five minutes. One gain was not alone in the slowing of the respirations, but the muscular effort of each inspiration was materially lessened. And so it was all night and all the following day. After each inhalation of oxygen, respirations dropped from six to twelve to the minute, and during the hours that the heart was irregular, it showed as noticeable an improvement after the oxygen was given as it did after an injection of strychnia, digitalin and nitroglycerine.

TENDON TRANSPLANTATION.*

By GEORGE P. BARTH, B.S., M.D., Milwaukee.

This subject is one which has been attracting the attention of the orthopaedic world more than any other during the last three years, with possibly the exception of the attention to the bloodless surgery stirred up by the recent tour of Dr. Lorenz.

Although tendon grafting or transfer is generally regarded as an innovation of recent date in the field of surgical treatment, such is not the case. It was probably first proposed and carried out by one Nisson, who in the Gazette Salutaire, No. 21, of the year 1770, reports a case in which the tendon of the extensor of the middle finger was severed and could not be sutured, and in which the proximal end was grafted upon the tendon of the index finger, the distal end being implanted into the tendon of the ring finger. Velpeau, in his Orthopaedic Surgery, ed. of 1839, and Malgaigni, in his lectures on Ortho-

* Read before the Milwaukee Medical Society, Jan. 27th, 1903.

paedic Surgery, published in 1862, alike recommend that severed tendons be sewed to adjacent intact tendons. The operation for the relief of deformity *per se* seems to have originated with Nicoladoni, who, in April, 1881, transferred the tendons of the peronei muscles to the bisected Achillis tendon for the relief of a case of Pes calcaneus paralyticus with good result. Von Hacker, Maydl, and others attached to Albert's clinic practiced it for the same lesion, but the results were unsatisfactory and the operation was discontinued in 1886. A few years later, Milliken and Parrish of New York reported cases, the latter performing his first operation, May, 1892, in a case of talipes valgus. Drobink, a Polish surgeon, next took it up and continued his efforts at perfecting the operation until he was able to report sixteen cases, obtaining brilliant results in a number of them. This surgeon was also the first to employ the operation in paralysis of the upper extremity. In 1893, Phocas operated on a single case, as did Winkleman in 1894. In this year also, Goldthwait of Boston took it up. Franke followed and was the first to apply this method to infantile spastic paralysis of cerebral origin, preceding Eulenburg, who is sometimes credited with being the first, by some two years.[1] In 1895, Goldthwait began the direct transplantation of muscle tissue, uniting the sartorius to the paralyzed quadriceps, thus making another progressive step as, heretofore, only muscles with definite tendons had been transplanted. Milliken repeated this operation, and in another case substituted a portion of the deltoid for the triceps brachii. In 1895, Krynski reported a case of grafting for traumatic separation of the flexor tendon of the middle finger. In 1897, Kirsch published a similar case in which he button-holed the peripheral ends of the cut extensors of the thumb into the extensor carpi radialis longior. Since this latter date numerous orthopaedic surgeons have performed this and similar operations, a recent alteration in technique being that proposed by Fritz Lange, in April, 1900, in which he recommends that the cut end of the active tendon be sewed, not to the paralyzed tendon, but to the periosteum, thus forming muscle attachment to bone which normally does not exist. Royal Whitman not only raises the periosteum but drills into the bone for the deeper insertion of the tendon.

The indications for operation are many. Put briefly, it is to be borne in mind and considered wherever deformity is the result of action of a muscle or of a group of muscles, the opponents of which are paralyzed or where the normal balance of action between antagonists has been permanently disturbed.

Among these may be mentioned:

1—Acute anterior poliomyelitis.

2—Peripheral traumatic paralyses.

3—Cerebral apoplexy producing local limited paralyses, e. g., equinus as treated by Vulpius.

4—Paralytic club-foot in progressive muscular dystrophy.

5—Cerebral palsies of children producing spastic deformities.

6—Traumatic avulsion of tendons or muscles.

Of these, the first offers conditions which are almost ideal for the performance of this operation, inasmuch as the damage done is limited and the lesion is rarely or never progressive after the acute symptoms have subsided. According to Gowers,[2] in 89 per cent. the extremities are affected in this disease and the proportion in which the upper and lower limbs are attacked is as 21 to 68. Consequently, most of the cases reported deal with the tendons of the leg. The conditions to be met in the leg are simple compared to those of the arm, owing to the complexity of the functions of the latter. Therefore, the field of operation has been considered somewhat limited where that part was involved.

In the spastic palsies of children the muscular cramp disappears almost entirely and free movement is obtained soon after recovery from the operative wound. In these cases the tendon is transplanted to the weaker antagonist (e. g., part of the Achillis tendon to the peronei).

Among those who have recently reported results in paralysis of the upper extremity, Krynski, Franke, Roberts, Vulpius, Hoffa and others have had good functional success. Milliken has successfully employed the deltoid in paralysis of the triceps.

In quadriceps paralysis Vulpius and Goldthwait substituted the action of the sartorius, while Hoffa used the tensor fasciae latae. Lange and others brought over the tendons of the biceps and semitendinosus. In club-foot Winklemann, Lipburger, Winkler, Vulpius, Franke, Drobink and Goldthwait have obtained good results. In paralytic pes valgus or flatfoot Parrish, Drobink, Phocas, Vulpius, Hoffa, Ghillini and Franke have corrected the deformity by transplantation.

The limits within which tendon transplantation may be employed for the correction of deformities due to muscular defect are wide. Vulpius goes so far as to state that the operation is impractical only when all the muscles of a limb are paralyzed. If one muscle or group of muscles be still intact, we may think of the possibility of improving

the functions of the limb by transplantation and of preventing or removing the secondary contractures and deformities.

All operators agree that the operation should not be undertaken until every other means has been exhausted to restore the function and nutrition of the muscles involved. As a rule, these efforts will extend over a period of at least two years. In acute anterior poliomyelitis the initial loss of power is generally far more extensive than the permanent. "In rare cases, electrical irritability quickly disappears even to the voltaic current from the destructive degeneration of the muscle fibres. More commonly after 6 to 12 months some faradic irritability returns. It may be slight, due to the recovery of a few fibres, insufficient in number to restore bulk or power, but the fibres which recover do so perfectly, so that the irritability becomes normal in degree, although the contraction which can be thus produced is very slight in amount. In other cases, considerable recovery occurs, so that some power and volume are regained although the muscles remain below the normal size," hence the necessity for allowing the above mentioned time to elapse between the initial lesion and the operative procedure.[2] Prior to operation, a careful and thorough examination of the condition of the various muscles must be made. It should be ascertained whether they react to faradism and the degree of such reaction. Careful study of the various movements produced by the action of the muscles will indicate which tendons to transplant and those to which they can best be attached. In children it is very difficult to diagnose by means of the electrical current alone which muscles are totally paralyzed and those which might regain their power, owing to the pain and fright produced by such an examination, and a clear insight into the conditions can be obtained only by viewing the body of the muscle in question; hence the advisability of making the incision long enough for this purpose. It is always possible to tell by the color of the muscle whether it is normal (dark red), totally paralyzed (waxy yellow), or simply atrophic through disuse (rosé red). Drobink lays stress upon the certainty with which atrophic muscles regain their activity by successful transplantation. In adults voluntary contraction will help considerably in determining the condition of the musculature of the part.

Where a choice of muscles is allowable, that muscle with several points of origin (fanlike) will be found most appropriate (e. g., extensor hallucis longus).

Five methods of procedure are recommended.[3]

1—Sewing of the tendon of a sound muscle to that of the paralyzed muscle, both being cut.

2—The fixation of the paralyzed tendon to the sound, the latter being undivided.

3—The transplantation of one-half of the sound to the bisected paralyzed tendon.

4—The indirect, in that a piece of sound tendon, strands of cat-gut, silk or other material is interposed on account of the shortness of the transposed tendon.

5—The periosteal transplantation as proposed by Fritz Lange.[4]

The last consists in the raising of periosteal flaps and the insertion of the tendon beneath them, thus forming a new muscular insertion on the bone.

Of these, the first is used exceptionally and only then when the sound muscle can be spared from its original function (e. g., sound flexor carpi ulnaris to the paralyzed extensor communis digitorum).

The second, when two tendons are adjacent or nearly so (e. g., in paralytic pes equinus the paralyzed tibialis anticus sewed to the extensor longus digitorum).

The third is employed chiefly when the tendo Achillis is used to supplement the action of one of the muscles on the front of the leg.

Periosteal transplantation is used where the transposed muscle acts with considerable force and a firm attachment is necessary. Lange first proposed this operation because he feared that the weakened paralytic tendon would lengthen under the strain of muscular action and the result of the operation be rendered questionable. This he found not altogether substantiated, as in minor grades of deformity results were good, but in the severe the atrophic tendon did lengthen under the contraction of the muscle after the bandage had been removed. Especially brilliant results have been obtained by this author and others in cases of paralysis of the quadriceps, which heretofore had always failed. Here, he brings the tendons of the biceps and the semi-tendinosis over and fastens them to the tibial tubercle or to the patella. In paralysis of the peronei, he splits the tibialis anticus and sews one portion to the cuboid to maintain dorsal flexion and outward rotation of the external digits. Another advantage claimed is that it allows of greater latitude in the choice of point of attachment.

In the indirect method, foreign material is introduced. It has been established that when strands of silk, cat-gut or other material have been introduced, they soon become embedded in new growth. In Nicoladonis' case, the strands of silk could scarcely be felt over the patella immediately after operation, while within a comparatively short time, a band the size of a quill could be seen when the muscles

were in action. Fritz Lange found that after two years and a half, in a child ten years old, the silk was embedded in a mass of bluish-white tissue the size of the patient's finger, and very closely resembled the ligamentous tissue of the joint. In one of his cases he used strands of silk 20 cm. long, and found that it answered very well for the natural tissue.[5]

Probably the most important point to be observed in the operation, the one, in fact, upon which success or failure depends, is the maintenance of normal tension in the muscles concerned. To secure this, the traction exercised on the tendon must be very great, and is best made by means of one to several silk sutures passed in the course of the tendon in a manner similar to Halsted's plain quilt suture of the intestine. Necrosis rarely follows this great tension on the tendon, Lange having met with but one case in his vast experience. Often operations for the lengthening or shortening of tendons must be combined with that of transplantation. After operation, the limb is fixed in an over-corrected position for a period of about six weeks, graduated gymnastics, massage and electricity then being employed to increase the tonicity and nutrition of the muscles.

The most favorable time for operation, according to Royal Whitman, is late childhood or early adult life.

As to the possibilities and ultimate results of the procedure, authorities differ. Both Whitman and Russell A. Hibbs are of the opinion that while the operation will not entirely supplant the use of apparatus, it will make them more effective. The German authorities, Hoffa, Lange, Vulpius, and others go a little further and state that in many cases the use of apparatus may be suspended. Virgil P. Gibney[6] gives the following results at the Hospital for the Ruptured and Crippled. Of ninety-two operations, sixty-nine had been traced. In 32 per cent. results were good, in 44 per cent. fair, and negative in 24 per cent. Classified, there were:

	Cases.	Good.	Fair.	Negative.
Equinus	8	1	6	1
Equino-varus	15	4	5	6
Equino-valgus	19	8	10	1
Calcaneo-valgus	12	7	4	1
Valgus	3	1	1	1
Calcaneus	1	..	1	..
Dangle leg	5	..	..	5
Thumb deformity	1	..	..	1
Drop wrist	5	1	2	2

Townsend[7] reports seventeen collected cases of deformities of the upper extremity, in the greater number of which good functional results had been obtained. Vulpius, in the "Beiträge zur Klin. Chirur.," recites three cases of spinal paralysis with all-four progression which were greatly benefited, the patients now walking upright and some distance without support or fatigue. Russell A. Hibbs[6] states that tendon transplantation had been performed in about one hundred and fifty cases at the New York Orthopaedic Hospital, and that although the ultimate results had not been as good as the immediate ones, the operation seemed justifiable, for it made apparatus more effective, even though not supplanting it. The operation, in other words, would probably prove to be an adjunct only to mechanical treatment.

During the last year several operators have attempted to correct the deformities produced by hemiplegia in adults by this method, but the results have not been as good as it was hoped that they would be.

After summing up the opinions of leading authorities, the conclusion seems justified that these operations should be done with far greater frequency than heretofore, since in themselves they are not dangerous and yet are capable of doing so much towards rendering the lives of these unfortunates more comfortable and agreeable.

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PARATYPHOID FEVER.*

By L. F. JERMAIN, M.D., Milwaukee.

Considerable literature has recently appeared upon the subject of infection by groups of bacilli intermediate to the typhoid and colon bacillus, known as the paratyphoid or paracolon groups. The first of these to be described was the bacillus enteriditis discovered by Gærtner and found in association with epidemics of meat poisoning. Others are the bacillus psitticosis, bacillus cholera suis, bacillus typhi muria, bacillus icteroides and Gwyn's paracolon bacillus.

* Read before the Milwaukee Medical Society, Jan. 27th, 1903.

These bacilli differ from the bacillus of Eberth in that they produce gas in glucose media, and differ from the colon bacillus in that they have the power of fermenting lactose, coagulating milk and forming indol. They are not agglutinated by typhoid sera except imperfectly in very low dilutions.

The members of the paracolon group do not show mutual reactions and the group must therefore be composed of a number of distinct organisms. The paratyphoids on the other hand interact without exception; that is to say, an active serum prepared from any one of the paratyphoid bacilli will agglutinate all the members of the group. The majority of the members of the typhoid-colon group are pathogenic to man. The various infections both in man and the lower animals exhibit much similarity, and the manifestations are gastro-intestinal in nature with or without constitutional symptoms.

The term paratyphoid fever has been employed in a clinical sense to designate infection with the paratyphoid or paracolon bacillus. Paratyphoid fever, however, does not constitute a clinical entity. In all, twenty-seven cases of undoubted paratyphoid fever have been reported with two deaths. Autopsies were performed on the fatal cases, and both large and small intestines were found normal throughout, except for moderate catarrh and a few superficial hemorrhages. The solitary and agminated follicles showed no lesions. The mesenteric lymphatics were hemorrhagic and the spleen was enlarged. The duration of cases reported varied from twelve to eighty-four days.

During the fall and winter I have had under my care three cases, all of which I believe were paratyphoid fever. All were in young adult individuals, and all recovered. The average duration of the febrile stage was sixteen days. No complications appeared in any case, but in one case there was a distinct relapse. In each case three serum tests with typhoid bacilli were made at different stages of the disease, and in no instance and at no time could a positive reaction be obtained. Unfortunately no culture of paratyphoid or paracolon bacillus was at hand to demonstrate a serum reaction in the first two cases, but in the last one this was done and a positive reaction obtained to Gwyn's paracolon bacillus.

Dr. F. E. Darling, who kindly made the tests, reports as follows:

"A twenty-four hour bouillon culture of blood incubated at 37 deg. C. remained sterile. Diluted blood twenty times and made four agglutination tests, two of bacillus typhosus and two of Gwyn's paracolon bacillus. This gave dilution of 1-40. After twenty minutes absolutely no reaction to bacillus typhosus. The paracolon bacillus lost

its motility almost completely within five minutes, and at the end of twenty minutes the bacilli had all grouped themselves into three large agglutinated masses and several smaller ones."

The failure to obtain a culture of the bacillus from the blood was probably due to the fact that the temperature of the patient had been normal for several days when blood for that purpose was secured. The symptoms were mainly gastro-intestinal, with mild constitutional disturbances. Diarrhoea was present in two of the cases, and persisted in one case for three weeks, in the other but one week. There was marked malaise, headache, anorexia, chills with fever, prostration, and in two cases mild bronchitis. In no case did the typhoid state develop, although mental dulness and apathy was marked. There was at no time any gurgling in the right iliac fossa nor marked tympanitis. Abdominal tenderness and abdominal pain were very marked in all the cases, both pain and tenderness being general over the abdomen. The spleen was palpable in all the cases and quite tender in one. A rash was observed in only one of the cases, and resembled the rose rash of typhoid fever. The temperature was irregularly remittent, and in this respect differed markedly from the ordinary continued temperature of typhoid fever. The evening temperature during the first and second weeks of the disease almost daily reached 103° to 104½°, while the morning remission was very marked, often as low as 100° to 100½°. The temperature charts of these three cases, when studied side by side, present great similarity.

The stools never were distinctly typhoidal in character, but considerable fetor was present during the first week of the disease. The pulse was unusually slow, never exceeding 100 per minute, even with a temperature of 104½°. In only one of the cases did the pulse seem dicrotic in character. The tongue in every case was heavily coated during the entire febrile period of the disease, and only cleared after the temperature had been normal for several days. No albumin was found in the urine, and the diazo reaction was obtained in two cases.

The temperature disappeared by lysis, and the morning temperature in each case showed a decided tendency to fall below normal for some time, even in the presence of a slight evening rise. Insomnia was complained of by all, and the loss of weight was decided in each case.

AUTUMNAL CATARRH OR HAYFEVER. *

By W. T. SARLES, M.D., of Sparta, Wis.

More has been written upon this subject, and less accomplished in behalf of the annual sufferer from this unwelcome visitor, than is the case with any other disease of like gravity. We stand to-day where we did twenty and more years ago with reference to the etiology and treatment of this disease, and its permanent cure. The advancement seems to be in the discovery of remedies which appear to give temporary relief, while the patient is still influenced by the exciting causes operating to produce the disease.

Osler says "The disease affects certain families, particularly, *it is said,* those with a neurotic taint," and classifies treatment under three heads. First, neurosis; second, climate; third, local treatment—by destruction of blood vessels and sinuses over the sensitive areas. Strümpell says that the disease is especially prevalent in England and the United States, but is not present to any appreciable degree in Germany, and further states that grains of pollen excite the disease and are repeatedly found in nasal secretions and in the tears of the affected persons. He recommends climatic treatment chiefly. Holt finds the disease manifest in children as well as in adults, but not earlier than from 7 to 10 years, while Allen and others find it from early infancy to old age, and not varying in character materially save in an increase of the bronchial catarrh in the very young and in the aged. Allen and others also find the principal cause of the disease to be due to nasal obstruction of various kinds, laying stress upon the anatomical peculiarity of the inferior turbinals, lying, as they do, well above the floor of the nostrils, thereby permitting irritation by foreign substances.

This is but one of the many local causes described in the numerous pages written by medical men of authority upon the etiology of the disease. Relative, however, to the question of *causation,* history, observation, and experiment all teach us conclusively that irritation by the pollen dust of various plants, flowers, and other substances, is the *exciting,* and idiosyncrasy the *predisposing* cause of the disease. By idiosyncrasy we mean "a peculiar temperament or habit of body or mind," "a characteristic susceptibility or antipathy inherent in an individual." Many examples of this condition are apparent to you all in your experience with patients peculiarly susceptible to certain drugs, and to the irritation caused by the inhalation of dust, pollen, or of vapors from certain substances.

* Read before the Central Wisconsin Medical Society, Jan. 27th, 1903.

It is said of the late Austin Flint that the emanations from certain feather pillows caused him coryza and asthma. A physician of my acquaintance is unable to handle tannin without coryza, sneezing, and asthma. A druggist of long experience told me that he was unable to handle mercury without experiencing the metallic taste and irritation of the throat peculiar to the drug. Quinine and belladonna erythemas are common, and even small quantities of certain drugs may, when handled and inhaled by susceptible individuals, prove toxic in action. We must account for this peculiarity of temperament upon the grounds of idiosyncrasy. (Fothergill well says: "One man's meat is another man's poison.")

Although we do not appreciate the pathologic or physiologic interpretation of hay fever, we have knowledge of its clinical manifestations. There is no question of doubt concerning the existence of a definite cause operating as the excitant in the case of hay fever, namely, irritation from the pollen of certain weeds and plants, such as the rag-weed, golden-rod, and dozens of others. The fact that so vast a number of people are simultaneously attacked with the first symptoms of the disease in a given locality, the sudden termination of the violent symptoms after the advent of a heavy frost affecting all alike, and the self-termination of the rhinitis, conjunctivitis, and bronchitis following in due time, all go to prove a common origin of the disease. Evidences of la grippe are no more manifestly due to a common cause than are those of hay fever, though more people seem susceptible to its influence.

That the pollen is active only at certain periods is evidenced by the fact that the hay fever season is earliest (in June) in Kansas and the South, and latest where plants ripen last, namely in North Dakota and Manitoba. It is inactive after freezing.

The symptoms of hay fever are too evident to need citation here. The loss of appetite, flesh, and sleep, with constant irritation and resulting enervation and despondency, make the patient's facial expression a fit standard for the artist who furnishes the "before taking" pictures for the advertising specialist. He becomes thoroughly unfit for business at this time, and blanks the disease and all people and things coming within his jurisdiction as well as outside of it.

It is at this stage that the clinical observer discovers that hay fever patients are neurotic and come from a neurotic ancestry, and require arsenic, phosphorus, and strychnine internally (Osler). With just as much reasoning should the clinician conclude that his patient—delirious from a potion of alcohol—necessarily inherits insanity for the reason that he finds him delirious and dangerous to his fellow-man.

A general practitioner once had a lady friend whom he desired to assist into matrimony. He also had a medical friend, (unmarried), a specialist in diseases of the throat and nose. His lady friend had a beautiful nose and face. His specialist friend fell in love quite generally with beautiful noses, and the practitioner suggested to his lady friend that she go to the specialist for treatment, on his recommendation. She declared that she never had, nor had she then any nasal trouble, so he gave her a prescription for a snuff. This she used, and immediately there resulted a beautiful coryza. She went at once to the specialist as directed. The latter told her he wished she had come sooner, that the disease had become so firmly established that it would take him some time to cure her, that it had come on through some nervous inheritance, etc., etc., precipitated by a severe cold. However, after three months of almost daily treatment, the specialist cured his patient, and later married her.

With reference to its permanent cure, experience teaches us that the removal of its cause is necessary to the cure of a disease, and the disease under consideration is no exception, hence a suitable climate, as free from the offending dust-laden pollen as possible, is necessary. The mountain top, mid-ocean, and uncultivated regions, prove the best localities. To this the thousands of hay fever association members can testify. I say uncultivated regions, for the reason that before cultivation there are no tame weeds or irritating pollen dust, and therefore no hay fever exists. In 1882 I met the late Henry Ward Beecher and party in North Dakota, where the prairies were wild and no weeds to be seen. He was a great sufferer from the disease, but was perfectly immune there, as were the rest of the party of sufferers who had come there for relief.

Temporary or palliative treatment is now best had in the use of a solution of adrenalin chloride in 1-5000 strength, locally applied to eyes, nose and throat, as may be indicated for its astringent qualities; internally the adrenalin tablets are useful. The preliminary application of protargol solution to the nose has given good results in the hands of some. The internal use of the fluid extract of rag-weed and golden-rod has rather aggravated the trouble than been helpful in my experience, and harsh local treatment at the time of the attack is not to be considered. When palliative treatment fails to provide sufficient relief, and the eyes, nose, throat and bronchi are all in a state of rebellion, the sooner the patient surrenders work and seeks all possible seclusion from the exciting cause, the better. The old and young, rich and poor, fat and lean, nervous and phlegmatic, of high or low estate, all share the burden of this disease in its season, if only there be present the special condition—idiosyncrasy.

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EDITORIAL COMMENT.

SYPHILIS OF THE NERVOUS SYSTEM.

Syphilis of the nervous system *per se* is constantly confused in the mind of the practitioner with other nervous or mental diseases, such as tabes or paresis, in which it has usually been but an antecedent feature. Though brain syphilis may not be easily distinguishable from paresis, nor cord syphilis from tabes, they are entirely separate processes. We should not identify them but reserve the term *parasyphilitic* for those cases of tabes or paresis in which there has been a history of syphilis.

There is perhaps nothing more confusing than the differentiation of paresis, on the one hand, from certain forms of brain syphilis,

and tabes, on the other hand, from true syphilis of the cord. In the case of paresis not only the clinical, but the pathological conditions may be similar to those of brain syphilis. Yet the separation of the syphilitic from the parasyphilitic lesions is very important in the matter of prognosis and treatment, the syphilitic cases being often amenable to antisyphilitic treatment, the parasyphilitic seldom or never.

One point which has been offered in the differentiation of these cases, is the *time* of their appearance after the syphilitic infection. "Fifty per cent.," says Patrick, speaking of syphilis of the nervous system, "come in the first three years after the chancre, more cases occurring in the first year than in any other. The sooner the practitioner learns that syphilis of the brain does not put in an appearance twenty or twenty-five years after an indiscreet coitus, the better it will be for the accuracy of his diagnosis."

On the other hand, true tabes does not appear until some time after the chancre. Oppenheim, whose experience is certainly very large, says that he never saw an undoubted case of tabes appear as early as two or three years after the primary infection. It may even appear as late as forty years after. In the light of this, Bonar's recent study of 116 cases in which tabes came within a year after the primary sore, is rather conflicting.

The time test, then, cannot be the whole *crux* of the question. It may go far, however, to solve a given case, and we may rest safe in this conclusion, that the earlier the appearance of the disease after the infection, the more likely is it to be brain or cord syphilis, and the later its appearance after the infection the more likely is it to be tabes or paresis (parasyphilitic).

AS PROF. LORENZ SEES US.

Accounts of Professor Lorenz's triumphal journey through the United States have been one of the chief items of popular interest in Vienna. The papers have been full of telegraphic accounts and letters, so that Lorenz has become the most widely known professor at the University. Prior to this he was comparatively unknown among the laity. At the same time this trip has altered popular opinion greatly concerning things American. It has done a great deal to make the Viennese believe that there is, at any rate, some evidence of civilization on the other side of the Atlantic.

In an interview published in a Vienna paper, Lorenz pays such a just tribute to our hospitals, medical schools, and our system of trained nurses, that we may feel a pardonable pride in a verdict that

comes from one whose words have the ring of truth, and who has proven himself a good observer of things and people.

He says: upon entering my own Vienna clinic yesterday—after a lapse of several months, my heart sank at the recollection of those grand, modern, model institutions across the Atlantic. Our own hospital, 'tis true, is an old institution that cannot meet the demands of the present day, (and there are a few such in New York, too,) though we hope that our new buildings will not be inferior to those in America. At present, however, the impression those hospitals have made upon me, are over-powering.

Even the private medical schools are different from our schools. The material is large, the general equipment is ample, and each student has his own utensils and instruments. This is easily understood when you consider that the private schools are richly endowed with gifts, bequests, and endowments. The progress in technic made by American surgeons is truly remarkable. Many of the operators are possessed of a degree of skill, technic and learning not inferior to that found in the famous Vienna school. The American students still visit Vienna in large numbers, but prior to their coming they have pursued a rigid course of instruction at home, their main object here being to devote themselves to some special branch of study. Thus, the American physician is able to say that he has added to his store of medical knowledge in Vienna.

All advances in science are primarily due to acts of charity. The fulfillment of a desire for deeds of charity is a fad in America.

Their nurses differ materially from our own. They are not servants, but are attractive, educated women, recruited from the better classes, who choose this difficult but noble profession in order to accomplish something in life. Marriages of patient and nurse, or of physician and nurse, are not infrequent.

The American student accomplishes an enormous amount of work in his five years of study. Being a student does not consist in wearing the fraternity cap and colors, duelling, and drinking. There are numerous medical societies where the students congregate evenings and discuss scientific topics. During my trip which took me from the Atlantic to the Pacific coast, I operated upon about 200 children gratis. This was done in order to demonstrate my methods to physicians and students. I am charmed with America and Americans. The American is not cold and reserved, but is amiable beyond all measure.

BABY FARMS.

The expressions of virtuous indignation indulged in by newspapers of the city of Milwaukee as a result of the "exposure" of the existence of "baby farms" and abortion establishments in the community, are anything but consistent when the advertising columns of the newspapers are inspected. On the very day of the "exposure," and for several days thereafter, the same establishments against the further existence of which the newspapers urge reform legislation, were allowed the opportunity of offering to the public, notice of their readiness to provide for "safe confinements," and to "adopt babies" in a "strictly confidential" manner.

Of course there are baby farms, where other things than baby farming are carried on. Every sensible man and woman in the city knows it and has known it for years,—ever since the newspapers have allowed such advertisements in their columns. For years the advertisements of these establishments have been a disgrace to the papers which give them space, and now, suddenly, they are awakened to a realization of the character of these establishments.

The recent agitation has resulted in a bill drawn by the District Attorney, and introduced into the Legislature. This bill has recently been reported for passage by the judiciary committee of the Senate, and it provides that managers of lying-in hospitals shall report the names of patients who are admitted, that births must be reported to the Health Department within twenty-four hours, and that reports must be made concerning the removal of children within a similar length of time; also that the institutions shall at all times be open to inspection by the Health Department.

The need of such regulations in the supervision of these establishments is evidenced by the recent trial at the Central Criminal Court in London, of two baby farmers—Walter and Sach—who were convicted of murder and sentenced to death. The Lancet and British Medical Journal (January 24, 1903) publish an account of the trial of these women. "Sach kept a 'maternity home,' one of the advantages of which, as claimed in the advertisements, was that 'baby can remain.' Walter appears to have been the one who got rid of the children, as she was found with one wrapped up as a bundle in her arms dead; the same thing occurred before with the same woman. It was left open to the accused to prove that they had in fact procured the adoption of infants by well-to-do people in accordance with their proposals to mothers, but this they were unable to do."

If such things are possible in London, where for years these

maternity homes have been under regulations requiring notification, nothing in the way of hidden criminality appears impossible here, where in the past institutions have been conducted without restrictions.

If the newspapers are really actuated by a desire for genuine reform in this particular, let them refuse to accept the advertisements of establishments of this character. And the public, long grown calloused to the newspaper announcements of private lying-in establishments, and to the exploitation of secret remedies for the relief of "menstrual suppression," etc., will probably utter a thankful "amen."

THE WAR AGAINST DISEASE.

Under the above caption, C. E. A. Winslow, of the Massachusetts Institute of Technology, writes an article in the Atlantic Monthly of January, 1903, detailing the various scourges that have been shorn of their terrors through advance in science during the past century. While one might be disposed to criticize the propriety of publishing in lay journals articles bordering upon technical medicine, in a popular or pseudoscientific fashion, an article upon a timely subject —as is the one referred to above—is decidedly apropos. The author gives some of the well known illustrations of the good effects of vaccination, of the enormous reduction in cases of typhoid fever through improved water supply, of the action of antitoxin in diphtheria, of the successful demonstration of the mosquito as the disseminator of yellow fever, of the causes of tuberculosis and "summer diseases." The author might have cited as a clinching illustration in favor of vaccination (does this subject still need a champion?) the statistics of the Franco-Prussian war.

Articles such as this one, not savoring of the sensational, written for a magazine that caters to a thinking public as does the Atlantic Monthly, ought receive every encouragement. They stimulate thought and argument on the economics of health and sanitation, and disseminate information, which—though arrived at through technical and strictly scientific methods in the course of well directed laboratory investigation—must and do call forth the earnest attention of all who delight in witnessing the spirit of progress evinced in the past century, and their applause at the humanitarianism displayed by the silent laboratory worker.

It were well if Dr. W. W. Keen's recent letter defining the status of vivisection, were given the widest publicity, in order to counteract the baneful effect that may have been produced by the remarks of U. S. Senator Gallinger, a man who—sad to relate—is a physician, and would a statesman be.

NEWS ITEMS.

A Bill to provide Anatomical Material. Senator Miller has introduced a bill in the Wisconsin Senate providing that all unclaimed bodies of paupers who die in public institutions be turned over to the Anatomical Department of the University, on demand. It would seem that such a law would provide an abundance of anatomical material and should be passed, if at the same time the interests of the established medical colleges in the state are properly safeguarded. These must not be forgotten.

Reorganization of the Medical Society of Milwaukee County. This society has sent invitations to all eligible physicians in the county to make application for membership, and at the last meeting (Feb. 12th) appointed a committee for the purpose of amending the constitution and by-laws so as to conform to the plans for reorganization of the American Medical Association and the State Medical Society.

State Sanitarium for Consumptives. Following New York, Illinois and other states, a bill has been introduced in the Wisconsin Legislature providing for the establishment of a State Sanitarium for Consumptives, and appropriating $100,000 and $1,000 a month for running expenses. The bill has the endorsement of the State Board of Health.

Appointments. Dr. A. J. Patek has been appointed physician to the Milwaukee Hospital, and Dr. G. P. Barth physician to the Children's Hospital, Milwaukee.

Attempt to Legislate against Christian Science Fails. An attempt to legislate against Christian Science in New Hampshire has met with defeat. Representative Abbott introduced a bill to prohibit the healing of physical ailments by Christian Scientists. The bill was referred to the judiciary committee, and, by a vote of 11 to 1, the committee refused to report the measure. The founder of Christian Science, Mary Baker G. Eddy, makes her home in Concord, the capital of the state.

Typhoid Fever and Oysters. The American oyster "scare" has been transferred to Europe, according to dispatches in the daily press. "London's epidemic of oysteria is serious. The oyster has been completely ostracised. It is customary for the market corporation to partake of a luncheon in which this shellfish predominates, but the superintendent of the Billingsgate Market received telephonic instruction from the chairman in the following form: "No oysters, please, as I don't want to die just yet."

As an instance of the gravity of the situation for oyster merchants, one of their number at Billingsgate has been at pains to secure a medical certificate for his oysters. This sets forth that his beds in the Thames estuary are inaccessible to sewage.

In the gloom of such news the growing popularity of lemon juice as a germ destroyer must be comforting to devotees of the succulent bivalve. Verily the universal law of compensation is a blessing.

A Post-Graduate School of Preventive Medicine. Wm. E. Curtis (*Chicago Record-Herald*) is authority for the following particulars concerning this recent acquisition of a most important branch of medical teaching.

"A Post-Graduate School of Preventive Medicine is about to be opened in Washington for the education of physicians who desire to perfect themselves in certain lines of study, and pursue special lines of investigation. The faculty will be composed of the surgeon-general of the army, the surgeon-general of the navy, the surgeon-general of the marine hospital, the superintendent of the government hospital for the insane, General George M. Sternberg, late surgeon-general of the army; Professor Stiles and Professor Wiley of the Agricultural Department, and other gentlemen of equal eminence in their profession. It will be the only institution of the kind in the United States, and there is none like it in any other country, although several of its features are already found in the University of Berlin.

None but graduates in medicine will be admitted to the school, and it is especially intended for the education of young doctors who are ambitious to connect themselves with the sanitary department of municipal government and secure commissions in the medical corps of the army and navy.

Sanitary physicians in the different cities of the country should have similar training, although too often they are appointed for political reasons only. It is believed, however, that public sentiment is being educated up to a point where it will demand that officials who have the public health in charge shall be especially qualified to perform their duties. In anticipation of such a demand the new school in Washington has organized a department offering unusual advantages for public health officers to perfect themselves in practical, scientific work; in a knowledge of sanitary laws, organization and administration, food inspection, sewage, water, soil, heating, lighting, ventilation, plumbing and the handling of contagious diseases. The members of the faculty are the best authorities on these subjects, and some of them are scientific specialists with a world-wide reputation.

The new institution has no capital, no buildings and no home. It is not a money-making institution. It has accepted the hospitality of the Columbian University, the Georgetown University, the Army Medical Museum, the Smithsonian Institution and other scientific branches of the government which will answer its purposes for the present, but the gentlemen who have organized it from philanthropic motives hope that some time or another somebody with means will appreciate the value of their work sufficiently to give them a building and endow their professorships."

THE LAW IN ITS RELATION TO MEDICINE.

By EDWIN S. MACK, A.M., LL.B.

The Physician's Obligations to his Patient.

II.

We have seen the general rules governing the liability of the physician to his patient and have found that the standards of the law are not very high, and that the physician is protected if he uses reasonable care and skill and follows the approved practice of his school. There are, however, elements arising in the application in practice of the doctrines worthy of some particular consideration.

The most serious danger the physician incurs comes from the nature of the tribunal that tries his cause, for the question of the propriety of a physician's conduct must in case of suit be determined by a jury. The members of the jury are necessarily not only not learned in medicine, but usually uneducated and untrained men, whose judgment on matters involving technical medical questions can seldom be based on any intelligent analysis of the circumstances. There are, however, two checks to protect the physician.

The first is that the burden of proof is on a patient to establish the physician's lack of care. The second is that the jury will not be permitted to guess that a physician has been negligent, but will be required to base their verdict on competent expert evidence. To charge a physician with liability, it is not sufficient merely to show that the patient became worse under his treatment and improved after the treatment ended, or to introduce the evidence of any non-expert person. A physician can be adjudged negligent or unskillful only on the testimony of physicians as experts, that the practice adopted was not such as physicians and surgeons, or ordinary knowledge and skill would have followed.

Besides this the law holds the physician liable only for his own individual acts or the acts of his assistant. If he sends some other physician as his substitute he is not liable for it. The substitute is regarded as an independent practitioner, for whose conduct no one but himself is responsible. The patient also is under an obligation to obey the physician's instruction. If he fails to comply with the physician's orders in any respect that contributes to the evil results,

he cannot hold the physician liable for them, even if the treatment would have been held improper as a matter of law.

While, as we have seen, the legal requirements of a physician are not very high, still within their limits the rules of law are applied rigorously. The physician must exercise the degree of care the law requires, under all circumstances, and he is liable for lack of sufficient skill in diagnosis as well as in treatment. So a surgeon is responsible for the method of operation he adopts as well as for his skill in performing it; and it was held proper in a case in Wisconsin to submit to the jury on expert evidence whether or not the point of amputation of a limb was not higher than it should have been, and the consequences of the operation actionable injuries in consequence.

The physician's duty does not end with the giving of a prescription or the performance of an operation. He must also give the patient and the nurse proper instructions; and failure to give such instructions, where ordinary care would require him, will make the physician liable for unfavorable results. Likewise the physician must exercise proper precautions for the patient's health in all respects, and he will be held liable if he fails properly to disinfect himself so that he communicates a contagious disease from one patient to another.

The physician is also under legal obligation to his patient not to abandon him without giving him a sufficient opportunity to obtain a substitute. Of course the physician is not under any obligation to accept any case, and this rule was adhered to in a case in which the physician was the only one in the vicinity; the case was urgent and the physician was tendered his fees in advance and had no excuse for not attending the patient. But when the physician does once undertake a case, he is bound to bring to it the degree of skill legally required, and not to abandon the patient when he is helpless.

In view of the physician's obligation to exhibit proper learning in his diagnosis, he ought not to hesitate to call in another physician in consultation in case of doubt. As a matter of law a physician is not obligated to ask for a consultation if he feels himself competent, though, of course, he takes the chance that a jury may deem him incompetent. So if a physician believes himself competent, but cannot make a satisfactory diagnosis for any reason, it rests in his own judgment to determine whether or not the calling of an additional physician will be helpful. The safer rule, however, in any case of consequence will be to have a second physician in consultation if there be doubt as to the diagnosis.

Recent Cases.

Noteworthy this month are three adjudications on the applicability of laws regulating the practice of medicine.

In *Bragg vs. State,* 32 So., 767, the Supreme Court of Alabama held that an "osteopath" was practicing medicine within the statute, and in *Parks vs. State,* 64 N. E. Rep., 862, the Supreme Court of Indiana made the same ruling regarding "magnetic" healers. On the other hand, the Supreme Court of North Carolina, in *State vs. McKnight,* 42 S. E., 580, held that an osteopath could not be required to obtain a license as a practitioner of medicine.

The constitutionality of the statutes regulating the practice of medicine was questioned in these cases in Alabama and Indiana, and both courts held the acts valid. A similar decision as to constitutionality was made by the Supreme Court of Maine in the case of *State vs. Bohemier,* 52 Atl. Rep., 634.

CORRESPONDENCE.

CHICAGO LETTER.

The Dunning Institution. The County Institutions at Dunning are fortunate, indeed, to have a medical man in charge. Dr. Neely who has been appointed has had special training in the Dunning Institutions, and a satisfactory administration can be assured.

The Chicago Medical Society Will Aid in Malpractice Suits. The Chicago Medical Society will henceforth aid all of its members in malpractice suits. A committee for this purpose, consisting of Drs. Evans, Moyer, and Bacon, has been appointed, and plans and rules covering matters of this kind are now being devised.

Fruit Juice as an Antiseptic. The action of lemon-juice on typhoid and colon bacilli is being studied in the city laboratory. It has been found, if concentrated, to kill these bacteria, and, if dilute, to exert an inhibition of their growth.

Other fruit-juices, especially grape-juice, exert a similar influence. The experiments are still being carried on, and before long we hope to learn more definitely the details of this interesting and important observation.

Pneumonia and Smallpox. The bulletins of the health department give evidence of an unusually large number of fatal cases of pneumonia.

Smallpox is again, causing some anxiety. There are 30 cases in the isolation hospital. The migratory unvaccinated colored man is the chief source of danger.

Another Fine Hospital. Drs. Senn, Henrotin and other prominent physicians of Chicago, are planning a new polyclinic hospital to take the place of the present institution which is inadequate. It is contemplated to have an artistic, elegant, modern building, thoroughly equipped for surgical work.

Hospitals for Cripples. A charity hospital for crippled children is being actively considered just now. A special meeting of the Chicago Woman's Club was addressed by many prominent physicians and private individuals interested in the project. Henry E. Weaver sent his check for $1,000, to head the subscription list, and many others promised support. At the same time, an adequate hospital for the care of contagious cases was warmly advocated. (W. W. P.)

BALTIMORE LETTER.

During the month of January only one regular meeting of the Johns Hopkins Hospital Medical Society was held. As Dr. Williams, the president of the society, was unavoidably absent Dr. Osler was in the chair. The meeting was held in the Assembly Room of the Hospital as usual, on January 19th, and it was by all odds the best attended meeting the society has had since the opening of the season in October.

The first number on the program was the report of an interesting series of surgical cases by Dr. Cullen. Most of the cases were illustrated by pathological material he had removed at operation. Of this material a large hydronephrotic kidney was, perhaps, the most interesting. The kidney was removed from a young woman who had been suffering with a large abdominal tumor since childhood. At operation a huge cystic kidney was found and the ureter below was completely occluded. Thus the case was not one of congenital cystic kidney but one in which the hydronephrosis had developed after the obliteration of the ureter. The opposite kidney was found to be considerably larger than normal and had evidently been carrying on the function of both kidneys for a good many years. Dr. Cullen reported a second kidney case which, after operation, proved to be a large sarcoma of the kidney.

Besides these two cases Dr. Cullen had two cases of intestinal obstruction, one of the colon just above the caecum. The stricture was caused by the contraction of the cicatricial tissue in a tuberculous ulcer. This had not completely occluded the lumen, but the final complete obliteration of the lumen had been accomplished by a small bird shot which lodged in the constricted orifice. This obstruction was followed by rupture of the caecum just above the stricture. At operation a section of bowel, including the stricture and perforation, was resected, and the patient is now on the high road to recovery. The second case was one of intussusception in a small boy, and the operation for the relief of the condition was followed by equally happy results.

After Dr. Cullen's talk, Dr. Randolph had four cases to exhibit and report on. The cases were all of the same nature, being instances of injury to the eye by small bits of steel. The steel had entered the eyeball in each instance. Dr. Randolph described the operation by which he had removed the steel. First the fragment is located by means of the X-ray, and then, after making an opening in the sclerotic coat as near the steel as possible, it is extracted by means of a large magnet. He had succeeded in saving the eye

in all the cases, but in only one was the sight restored. This case was operated on four days after the accident, while the others had delayed seeking relief a much longer time. Dr. Randolph thinks that by this operation many eyes can be saved if taken early enough, and even if operated on late if the vision cannot be saved the eye itself can, and thus an unsightly enucleation can be avoided.

The program ended with a very interesting lecture by Dr Stiles, of Washington, on the prevalence of Uncinariasis in the Southern States. He prefaced his remarks by a lantern demonstration of the anatomy of the parasite and the points in which it differs from the European form known as Ankylostomum duodenale. In the American form the distinguishing features are the absence of hooks at the head, and the difference in the appendages on the caudal bursa. He has demonstrated the American worm to be a distinctly different parasite, and has given it the name Uncinaria Americana. The disease produced by the worm, however, differs in no way from that known in Europe as Ankylostomiasis or Egyptian chlorosis.

After the lantern demonstration Dr. Stiles gave an account of his trip through some of the Southern States, especially Florida, Georgia and the Carolinas. Here he found the disease to be very prevalent. It is confined almost entirely to the sandy farms. The parasite evidently cannot develop in a clay soil, for the only cases he found in the clay regions gave a history of having lived previously on sandy soil. He found that the parasite can live at least six years in the intestine without a fresh infection, and consequently he discovered many cases in the cities where new infection is impossible on account of better sanitary conditions. However, in every case, there was a history of having lived on a sand farm recently. On these farms he found deplorable hygienic surroundings, and the people a dirty, shiftless lot, more on account of their disease than anything else, however. These people form "the poor white trash" of the South, and the existence of such a class Dr. Stiles attributes to the Uncinaria Americana. He gave a brief account of the symptoms of the disease and a ready means of diagnosis without the microscope, and concluded his remarks by a few suggestions as to means of eradicating the disease. A full account of his work has been published by the Bureau of Animal Industry at Washington, and may be had for the asking. (R. G. W.)

PHILADELPHIA LETTER.

At a recent meeting of the corporation of the University of Pennsylvania, the following men were elected trustees: Dr. Robert G. LeConte, Mr. Bertram J. Lippincott, and Mr. C. S. W. Packard.

Dr. Richard Schorse, of Milwaukee, has been appointed a resident physician to the University Hospital.

The old administration building of the University of Pennsylvania Hospital is to be replaced by a modern structure, and other improvements are contemplated that will cost $300,000. When these alterations are completed, the capacity of the institution will be doubled.

Dr. James Tyson has been elected visiting physician to the Pennsylvania Hospital as successor to the late Dr. Frederick Packard.

Mr. Andrew Carnegie has offered $50,000 to the College of Physicians, on the condition that the same sum be subscribed by others. The offer has been accepted, and a committee has already raised $18,000. Of this sum Mr. F. W. Vanderbilt gave $10,000, through the efforts of Dr. S. Weir Mitchell. The medical library of this institution is the second largest one in America, and on account of its size, a much larger building is required to properly store the books. So it is expected that the money will be used in the erection of a suitable library building and in the remodeling of the present structure.

On January 13th, the Philadelphia Pediatric Society elected its officers for the ensuing year. Dr. Hamill, the retiring president, delivered an eulogy on the life of the late Dr. Frederick Packard. The new officers are: President, Dr. D J. Milton Miller; Vice-presidents, Dr. J. H. Jopson, A. A. Eshner and J. H. McKee; Secretary, Dr. C. H. Weber; Recorder, Dr. D. L. Edsall; Treasurer, Dr. H. B. Carpenter.

Mr. Henry Phipps, of New York, has offered the city of Philadelphia, the sum of $1,000,000, for the erection and maintenance of a home for consumptives. This institution will be modelled after the Pasteur Institute of Paris, and will be devoted not only to the treatment of tuberculosis but also to the study and investigation of that condition. The hospital will include a dispensary for the care of ambulatory cases, modelled after the Emile Roux Dispensary at Lille, France. Dr. L. F. Flick, who has had considerable experience in the treatment of tuberculosis, will be in charge of this institute. A large four storied house has been leased at 238 Pine Street, which will be the temporary quarters. The medical staff will for the present consist of three physicians.

The Carnegie Institute has granted $2,000, to Drs. Simon Flexner and Hideyo Naguchi of the University of Pennsylvania, for research work. The research is to consist in investigations on the toxic action of snake venom.

(W. E. R.)

CLINICAL REPORTS.

LESIONS OF THE RIGHT HEART.

From a Clinic by Prof. Neusser, of Vienna.

(Special Correspondence.)

Neusser and his assistants have been for some time especially interested in lesions of the right heart, and it has come to be their opinion that these conditions are much more common than is generally believed. Organic tricuspid lesions are diagnosed frequently, and have, in these cases, usually been confirmed at autopsy. The following are two of the most interesting, which have been recently demonstrated in this clinic:

1. A pale, emaciated woman, 31 years of age, who has been in the hospital fifteen times in the last twelve years, and whose heart symptoms have remained practically the same. She was born a "blue baby," and, for the first five weeks of life, was intensely cyanotic. She has never had rheumatism, has always been "short-winded," never had edema. At present has neither cyanosis nor edema. The pulse is regular and of moderate tension. The pupils are oval and eccentric. There is no venous pulse in the neck. Heart: the apex beat is not visible; it is felt in the fourth interspace just within the nipple line. Pulsation is also felt in the fifth interspace. A systolic thrill is felt best to the left of the sternum, in the third interspace, and a diastolic shock in the region of the pulmonary valves. Heart dulness extends to the second interspace above, to the mammillary line, and one finger's breadth to the right of the sternum. On auscultation, a loud, long, rough, systolic murmur can be heard all over the thorax—best, however, in the third interspace to the left of the sternum. It is transmitted especially to the right, and is louder in the right than in the left axilla. The sounds at the apex are clear, the second pulmonary is accentuated.

The findings are those of a pulmonary stenosis, except for the accentuated pulmonic second tone. The stenosis is probably congenital: 1st, on account of the cyanosis just after birth; 2d, because of another evidence of malformation—namely, that of the iris (upon this Neusser lays great stress). The accentuation of the second pulmonic is explained by a great increase of pressure in the pulmonary circuit. This is believed to be due to communication at some point with the aortic circuit.

The complete diagnosis, as far as the heart is concerned, is: 1, Pulmonary stenosis (not, however, due to valvular sclerosis), with 2, Patency, of the ductus arteriosus, or an opening in the interventricular septum.

2. A boy, aged 21, all of whose symptoms date from an injury five weeks previous to admission into the hospital. At that time a wagon passed over him, causing on the surface only superficial abrasions. A physician, who examined him then, discovered a heart lesion. The same night the patient twice heard something snap in the region of the heart, and thought he felt something give way. After the injury, cyanosis and edema appeared whenever he got out of bed.

On examination, there is some cyanosis and edema of the lower extremities, also hydrothorax and ascites. The jugulars bulge markedly and show systolic pulsation; there is also a positive liver pulse. The heart is greatly enlarged in all directions; dulness extends to the anterior axillary line, to the first interspace above, and three finger-breadths to the right of the sternum. An exceedingly loud murmur is heard, whose characteristics and distribution correspond

closely to that observed in the preceding case. A faint diastolic murmur is also heard in the third and fourth interspaces to the left of the sternum.

Diagnosis: Tricuspid regurgitation. Pulmonary stenosis (probable). 1. on account of the character and transmission of the murmur; 2, because of the absence of an accentuated second pulmonic tone.

The only explanation of this combination of lesions, resulting from an injury, that has presented itself, is the following: A flap of the tricuspid valve may have been torn loose—causing insufficiency —and may float in the pulmonary artery—causing the findings of a stenosis. Traumatic valvular lesions are extremely rare, and none similar to this one has been reported. The possibility of an injury within the heart, without external evidence, was illustrated by a specimen obtained a short time ago by Kolisko at a coroner's autopsy. Death in this case was produced almost immediately by an hydraulic press, so that no clinical findings could be obtained. While in this heart the lesions were not exactly those supposed to be present in the case described, they were of a nature (and that, without any evidence of an injury on the surface of the heart), that clinically similar findings might have occurred. (L. M. L.)

MESOTAN. A NEW SALICYLIC ACID PREPARATION.

By A. J. Herschman, M.D., of Milwaukee.

Little being known in this country concerning the medicinal properties of mesotan (methyloxymethylether of salicylic acid), the profession may be interested in a report on my experience with this preparation. My first supply of the drug was obtained from Europe, but it has lately been placed on the American market.

Mesotan is a clear, yellowish liquid, with a faint odor of oil of wintergreen. It contains salicylic acid, which is rapidly absorbed from an unbroken surface, the urine showing the characteristic salicylic reaction within about 40 to 50 minutes, as against 10 to 20 minutes required for the reaction where salicylates are taken per os.* This fact, and the impossibility of accurate dosage in external applications, limits the extent of its usefulness. While mesotan will hardly displace the sodium salicylate and aspirin now dominant in the

* Shortly after the discovery, in 1876, by Buss and Stricker, each independently, of the specific effect of salicylic acid in polyarthritis rheumatica, Drasche, of Vienna, showed that resorption took place after external application of alcoholic or watery salicylic solutions, and that these would be found in the blood as sodium salicylate.

treatment of acute polyarthritis, it holds its own as an elegant adjuvant to the treatment, when employed as an external application to the swollen joints. The pure drug is somewhat irritating locally, and requires dilution with 10 to 50 per cent. olive oil. Because the application to the affected parts frequently proves a painful manipulation, I deviated from Dr. Floret's original directions (Deutsche medic. Wochenschr., 1902, No. 42) to rub it in lightly three times a day, and apply it once daily in 8 to 10 gramme doses, covering the part with oiled silk and wrapping it up warmly. The local relief is prompt; as one patient put it: "It soothes, and the swelling seems to disappear as if by magic." In acute cases mesotan enables us to decidedly reduce the internal doses of the salicylates, and replaces fully the turpentine-salicylic acid ointment resorted to in obstinate cases. Even after doses of three-quarters of an ounce I did not see any toxic effect as is sometimes met with in the turpentine-salicylic acid treatment. The most distinct advantage of the new drug is, however, the great relief it produces in the tiresome subacute and chronic cases. The dreaded pain accompanying any movements apt to cause tension of the thickened joint capsules disappears for several hours. Undoubtedly mesotan is ineffectual in causing resorption of the hyperplasias, but a similar relief from pain is hardly obtained by any other forms of salicyl administration. The use of mesotan does not interfere with the employment of various other remedial measures, as hydrotherapy, electricity, massage and fomentations, or the use of superheated air, mud packs and sand-baths. Since I began to use mesotan, Reichmann (Therapie der Gegenwart, Dec., 1902) has published observations corroborating those already made. He proposes the combination of mesotan with castor-oil, to overcome the otherwise disagreeable odor, of which my patients have, however, not complained.

Floret's and Reichmann's remarks as to the more rapid checking of the fever, or lessening of the duration of the disease, seem to be somewhat optimistic. Contrary to Reichmann, I saw an acute endocarditis develop, although enormous doses of mesotan and salicylate of sodium were administered. Mesotan has certainly no other value than that of its intense salicylic effect, and is to be recommended as an efficient and seemingly harmless form of external salicylate medication, fit to assist, diminish, or replace internal administration of the drug.

SOCIETY PROCEEDINGS.

MILWAUKEE MEDICAL SOCIETY.

Meeting of January 27, 1903.

The President, Dr. A. J. Burgess, in the chair.

CASE OF INCOMPLETE DISLOCATION OF THE CRYSTALLINE LENS.

DR. G. E. SEAMAN—The patient I present is a machinist, aged 32, who has always been in good health, and whose refraction so far as known has been normal. Two months ago while endeavoring to adjust a belt to a pulley, he was struck in the left eye by a flying piece of wood. When I saw him shortly after the accident he gave evidence of considerable shock; the eye was congested, painful, sensitive to light, pupil dilated, there was some blood in the anterior chamber, there was no external wound. It was impossible at that time to make a satisfactory examination. He was sent to the hospital, ice applications, atropine, and an anodyne were ordered. The next day an examination revealed a partial dislocation of the lens downward and forward; the eye was greatly irritated, tension increased, the pupil not so widely dilated as directly after the accident, vision equalled counting fingers close up to the face. Ice applications and atropine were continued, the patient was kept quietly in bed with the head low for a week, and then allowed to go home where he remained two weeks longer. The dislocated lens viewed with the ophthalmoscope presents a dark crescent running across the pupil with the convexity upward. With oblique illumination the lens first presented a cloudy appearance which has since become more pronounced, so that at present there is a well marked opacity or traumatic cataract. The iris, as you see, is tremulous as it often is in these cases, and the anterior chamber somewhat deepened. The symptoms of irritation passed away within the first month, so that the eye at present is quiet, there is no perceptible rise in tension, vision equals $\frac{10}{200}$. The opacity, however, is progressive and will at some future time involve the necessity of cataract extraction. Or possibly, a glaucomatous condition may develop as often happens, and interference for this will be demanded. The patient has not complained of the severe neuralgic pains which often accompany this condition. The gentlemen who are interested may have the opportunity of making an ophthalmoscopic examination.

Dr. Geo. P. Barth read a paper on "Tendon Transplantation." (This appears among the original articles in this issue.)

Discussion.

DR. H. E. DEARHOLT—There are two objects in the operation of tendon transplantation: first, to reduce the power of unopposed muscles, and second, to change the point of leverage of remaining muscles. I wish to particularly emphasize the necessity for maintaining a proper balance in the power of

the opposed muscles. Many of the reported failures were due to the fact that weak muscles, such for example, as the peronei, were called upon to do the work of the strong calf muscles. Failure was the only result possible in such cases.

DR. G. P. BARTH—It is a physiological fact that the lifting power of a muscle is directly proportionate to the area of its cross-section; in other words, dependent directly on the number of parallel muscle fibres shown by cross-section. This must be borne in mind when contemplating a transplantation. When one muscle is known to be more powerful than its antagonist, e. g. the calf muscles and those on the front of the leg, the tendon of the stronger may be split and one portion transferred to the weaker side thus distributing its pulling power.

I desire to again emphasize the importance of obtaining a sufficient degree of tension on the transposed muscle. To show how great such tension must be is shown by a case of Lange's in which it was found, on removal of the bandage, that the silk threads used had cut through the overlying tissues on the front of the leg and extended over the anterior angle like a telegraph wire.

Dr. L. F. Jermain read a paper on "Paratyphoid Fever." (This appears among the original articles of this issue.)

Discussion.

DR. W. C. BENNETT—Gwyn's first reported case showed the symptoms of typhoid fever even to intestinal hemorrhage, and cultures from the blood demonstrated the paracolon bacillus. There was no agglutination of typhoid bacilli at 1 to 5, through agglutination with the paracolon bacillus occurred at 1 to 200. More recently reported cases show some variation from the symptoms of typhoid fever; the disease begins suddenly, there are no regular up and down temperature movements, the rose spots may or may not be present, though there is diarrhoea, hebetude, and enlargement of the spleen. Paratyphoid fever is distinguished from atypical typhoid fever by reacting only to the proper colon bacillus. During the past six months there must have been many cases in the city, which were diagnosed as either typhoid fever or la grippe. Greater care should be taken to differentiate this disease and to arrive at a proper diagnosis.

DR. G. J. KAUMHEIMER—I think that I have had several cases of paratyphoid fever; they showed symptoms of mild typhoid fever, but a negative Widal reaction was reported by the Health Department. One case was that of a woman with cough, who gave a tubercular history. The disease began insidiously; there were stupor, some insomnia, no delirium. There were 3 or 4 sharp attacks of epistaxis between the 12th and 20th day. The spleen was enlarged and the temperature was irregular. At the end of the third week the Widal reaction was still negative, and at this time recovery was practically assured.

DR. RALPH ELMERGREEN—These cases are reported as paratyphoid fever. If they have all the typical typhoid symptoms they should be considered as typhoid fever, and not give way so readily to the bacteriological diagnosis. I am now nursing, and have for some time treated several of these mild

typhoid fever patients. All the clinical symptoms are present, and it is manifestly absurd to tell the practical practitioner that these cases are not typhoid because the bacteriological examination is negative. I yield to no one in the store I set by the microscope and test-tube, but bed-side experience should not be held in contempt. The bacteriologist should remember that, while positive findings always confirm, negative findings do by no means negate our clinical diagnosis.

DR. W. H. WASHBURN—I have seen no cases of this disease although in the fall two cases appeared to me to be possibly paratyphoid rather than typhoid fever, but both reacted to the typhoid and not to the paratyphoid bacillus, and blood cultures were sterile. To call cases of paratyphoid fever mild cases of typhoid would certainly be unwarranted and unscientific, present facts indicating that it is as distinct a disease as typhoid and typhus fevers.

Though the spleen is enlarged in paratyphoid fever there are no intestinal lesions, nor are there any of the lymphatic lesions proper to typhoid, a fact demonstrated in the cases that have come to autopsy.

Furthermore while the typhoid bacillus can rarely be demonstrated in the general circulation, the paratyphoid bacillus can almost invariably be thus found. Paratyphoid is therefore a general infection, without, so far as is at present known, local lesions, in this respect resembling typhus fever.

DR. L. F. JERMAIN—Bacteriologists claim that if the serum does not react to the typhoid bacillus the disease is not typhoid fever. Gwyn found only two cases not reacting to the Widal test, and both agglutinated Gwyn's paracolon bacillus. Schottmüller had five cases which were negative to the Widal test, but all agglutinated the paracolon bacillus. I think that there are many cases in the city; many are reported as typhoid fever, but no Widal reaction can be obtained by the Health Department. As regards the new name —paratyphoid—I think it appropriate. We might as well call varicella mild variola, as to call paratyphoid mild typhoid. It differs clinically, anatomically, and bacteriologically from typhoid fever.

A CASE OF MYOSARCOMA.

DR. A. H. LEVINGS—In August, 1902, a married woman, fifty-six years of age, the mother of four children, consulted me on account of a large abdominal tumor. The family history was negative. In the personal history the patient stated that she had had an abdominal tumor for the past eight years. Because of its slow growth, this had been the occasion of no special inconvenience, until during the past six months, since which time it had grown rapidly. The patient also suffered for many years from an umbilical hernia. This had remained almost stationary, causing no disturbance, until a few months previous, when it had increased rapidly in size.

When the patient came under observation, she appeared to be in a fair state of health in that her color was good, and she seemed well nourished. She was, however, suffering from a good deal of abdominal pain, pain in the umbilical region, as well as from severe vomiting and obstinate constipation. A superficial examination disclosed the presence of a hard, somewhat irregular, quite sensitive, not freely movable, non-fluctuating abdominal tumor extending from the pelvis to the lower ribs and filling practically the whole abdomen. At the site of the umbilicus there was a second tumor, somewhat

irregular, very tender, and quite immovable and of the size of a croquet ball. This growth seemed indirectly connected to the one in the abdomen.

A vaginal examination disclosed the fact that the abdominal tumor had extended into Douglas's cul-de-sac, pressing this downward toward the perineum and obliterating practically the upper half of the vagina. The woman had been occasionally examined previous to the last six months by competent physicians, and the growth had always been diagnosed as a multiple fibroid. In consequence of its recent very rapid growth it was thought to be malignant.

An operation was undertaken largely on account of the increasing vomiting and constipation which seemed to be due to the compression of the sigmoid or rectum. In opening the abdomen two elliptical incisions were made to surround the umbilical tumor, which was then excised. The growth was found in direct connection with the omentum and indirectly with the uterus. The abdominal tumor was a myoma; some of the growths being intramural and others subperitoneal. A soft cellular mass, which filled Douglas's cul-de-sac and the major portion of the pelvis, was given off by a comparatively slender pedicle from the posterior aspect of the large uterine myoma. This pedicle gave way spontaneously during the subsequent manipulations. The uterus was amputated just above the vaginal junction and the large mass of soft cellular tissue filling the pelvis was removed by the hand. This cellular mass had so many attachments to the rectum and sigmoid that it could not be completely removed. The pelvis was drained with a few wicks of iodoform gauze and the major portion of the incision closed. The patient recovered nicely from the operation, but died about four months thereafter from a recurrence in the pelvis.

DR. J. M. BEFFEL.—Microscopic examination shows a portion of the uterine tumor to be a typical fibro-myoma, which passes gradually into a mass composed of irregular spindle cells of varying size, some extremely large, polymorphonuclear cells; karyokinesis is common, some being very irregular. The umbilical growth is like the sarcomatous portion of the uterine tumor. Whatever may be the correct histogenesis of these growths, one thing seems certain, that is—that they are practically always of the same type. This type is not given in most classifications of sarcomata, so it seems proper to look upon them as cases of malignant myomata or Myoma Sarcomatodes.

Meeting of February 10, 1903.

The Vice-President, Dr. L. F. Jermain, in the chair.

Dr. A. W. Rogers presented a paper entitled "Typhoid Psychoses, with a report of two cases." (This will appear among the original articles in a subsequent issue of the Journal.)

Discussion.

DR. R. DEWEY.—The conditions which may be termed insanity or psychosis, strictly speaking in typhoid, are of especial interest and have received an increased amount of attention. The older writers upon this subject always reported very unfavorably, and considered the prognosis, so far as the recovery from the mental disease was concerned, very doubtful. But later experience has shown an increasing number of recoveries. Whether this be due to im-

proved methods of treatment, more accurate diagnosis, or any change in the type, is difficult to judge. But there is a great deal of difficulty in classifying these cases. In the first place, a simple delirium of typhoid fever differs only in degree from mental disease. Either this or a more pronounced or prolonged attack may be regarded as a "psychosis." Yet there is a line drawn between these cases and the simple delirium is not recognized as the result of a neuropathic constitution which nevertheless is the case, and there are all possible degrees of psychosis in typhoid fever only those being recognized as insanity which reach a certain duration and intensity or persist after the fever is gone. I don't think that any of the writers who have described these cases have yet given a clear outline upon which a diagnosis may be made of certain distinctive forms. There is, as a rule, a single functional state, but they are all probably dependent, in varying degrees, upon the intoxicating conditions of the blood, plus a predisposition to mental disease due to a psychopathic heredity. The precise nature of the morbid process is something that remains yet to be understood and elucidated. The changes in the milder cases probably are to be regarded as of a bio-chemical nature, and not organic or structural in their nature while these latter supervene in the more serious cases.

DR. W. H. WASHBURN—I have been very much interested in this paper, and have often thought that it was surprising that in the general literature of the practice of medicine, there is so little said upon the subject of psychosis in typhoid. In even the larger of the works, as the Twentieth Century Medicine, there is very little said further than the discussion of the delirium of typhoid. When we consider that typhoid fever is so widespread a disease, and such a large proportion of the human family at one time or another suffer an attack, and that such a large proportion of the community inherit a neurotic tendency, and that the disease produces such a profound physical exhaustion, it is surprising that we do not see more cases of insanity than we do. I think that all of us see a good many cases of a mild form, in which the patient recovers from the fever and for a considerable time finds it difficult to rid his mind of the delusions that occupied him during the delirium. I remember the case of a dressmaker who thought some oil had been spilled over the dress she was engaged in making at the time she was taken sick, and nothing except actual production of the dress would convince her that it had not been spoiled. Another patient imagined a friend of his, who was a railway employe, had lost his position, and this delusion persisted until he actually saw the individual and was told positively of his mistake.

I recall at the present time only one case of actual insanity, and that was some years ago, in a Swedish miner. The Swedes, I think, produce a pretty large proportion of cases of insanity. This man was taken sick in August. He was living in a house with five or six other Scandinavians, keeping "bachelors' hall." During the time of his sickness all the men left the house, continuing at work, and literally left him to his destruction. He had no one to nurse him, but finally recovered, and after his temperature had been normal for a considerable time, he became insane. His insanity was not active but he sat around the house in a stupid way, having delusions of one kind or another, manifesting what our friend, Dr. W. F. Becker, would call "a morbid sense of injury." But in about a month or six weeks he recovered from this condition, and the recovery was perfect.

DR. A. J. PATEK—Some years ago I saw and reported two cases of mania. One of these was fatal and the other recovered. One case was that of a man

who became maniacal in the absence of fever symptoms, and a day or two later developed typhoid fever. He died several days later. The other was in the case of a young woman who became maniacal and had to be confined to a cell. She recovered. Her typhoid symptoms also developed several days after the mania had set it. The mortality in these cases is certainly very high.

DR. G. E. SEAMAN—I would like to ask whether alcoholism does not play an important part in the psychoses of typhoid. In the army I came in contact with a great many cases of typhoid, and those in which marked delirium occurred were cases of men addicted to alcohol, and the few cases of psychosis observed were also in such men.

DR. L. F. JERMAIN—What in Dr. Rogers' experience has been the effect of hemorrhage from the bowels upon the mental condition?

DR. A. W. ROGERS—I have to say that in the cases I have reported there was no history of hemorrhage. The cases that have come under the observation of others, show that hemorrhage has a tendency to increase the severity of the mental disturbance. It stands to reason that anything so exhausting as a hemorrhage could not do otherwise. Further, in regard to these two patients: one of them I heard from a few days ago, having been dismissed from the sanitarium four months previously. She is now back at her work and is caring for 37 boarders; so she is in prime condition of body and mind. In regard to the Widal test and the diazo reaction, I would say that neither of the patients was in a state of mind to secure a specimen of blood. The diazo reaction was found in both cases.

In regard to Dr. Washburn's remark concerning the Swedes, I have a friend who has been practicing medicine in North Dakota for some time. He states that the percentage of insane among the Norwegians and Swedes has been phenomenally on the increase. The explanation he offers is that it is to a great extent the result of home sickness. They go to the plains of North Dakota, where their environment is so very different from that at home.

We have not yet been able sufficiently to define insanity. As Dr. Dewey has stated, delirium is insanity, using the term in its broad sense. We cannot say where delirium ends and a psychosis begins. Authors are more prone to call a mental derangement a psychosis where it persists, especially after the temperature has subsided. The young man had been in the Keeley institute in Detroit. His drinking to excess covered a period of two years previous to his entering there. He ceased drinking at once and hadn't tasted a drop of liquor up to the time of his break-down some months later. There is no question in my mind but that his hallucinations were due to alcohol.

Dr. W. A. Sickels read a paper on "X-Ray Equipment and Methods, with a consideration of Skiascopy of the Respiratory Organs." (This paper will appear among the original articles in a subsequent issue of the Journal.)

Discussion.

DR. A. W. MYERS—One point Dr. Sickels has brought out is important, and that is that in physical diagnosis the X-ray, while it is a valuable accessory to the other means of investigation at our command, does not supplant them. I think the same thing may be said in regard to its therapeutic value.

It is perfectly clear to every one that the Roentgen ray is not going to

supplant surgery, but it is a valuable addition to the armamentarium of the surgeon. A great many cases that are inoperable are relieved by it and some should be treated by it after operation. Take, for instance, a breast case: even the most complete excision should be followed by a systematic course of X-ray exposure. I think that time only will remove the feeling which exists in the bosom of the medical fraternity against its use in this manner. They will find that it is only another means at their command, and not one that is going to drive their methods into the background.

Dr. Sickels' paper is presented in an excellent and able manner, and leaves little to be added.

DR. W. A. SICKELS—I want to say one thing about that meeting of the American Roentgen Ray Society in Chicago. It was very unsatisfactory and disappointing in every respect. Few of the men who are doing the best work in that line in this country were there with the exception of a few non-medical workers. The attendance included a large number of irregulars, even osteopaths. Altogether, the attendance and the discussion, both, came far from representing the best that is being done in X-ray work in this country.

Meeting of February 24, 1903.

The Vice-President, Dr. E. W. Kellogg, in the chair.

Dr. W. C. Bennett read a paper on "Poisoning by Noxious Gases," and Dr. T. L. Harrington presented a report of "A Case of Acute Capillary Bronchitis, caused by the Inhalation of Nitric Acid Fumes." (Both papers appear among the original articles in this number of the Journal.)

Discussion.

DR. J. H. HACKETT—After listening to Dr. Harrington's excellent paper I have very little to add. The symptoms in all the cases were very similar to the case of Mr. Lancaster. The symptoms began to show themselves some hours after the men had inhaled the fumes, depending, I should say, upon the quantity inhaled and upon the physical condition of the men. I am satisfied that Captain White's and Chief Foley's condition was such that oxygen or any other treatment would have been of no avail.

When I first saw Chief Foley at 9 p. m., his condition was very critical—intense dyspnea, deep cyanosis, very weak and rapid pulse, cold extremities. Accompanying this was a very persistent cough, with frothy expectoration, and there was a general congestion of the lungs with some edema at the base. Upon the application of heat and heart stimulants he was enabled to sit up and converse with his friends for some time. Then pulmonary edema set in and he no longer responded to stimulation. Dry cups were applied to the entire chest and gave marked temporary relief. The fumes had done their deadly work, however, and every means employed failed.

When I first saw Mr. Lancaster, the following morning, he complained of a feeling of constriction over the chest and had a very harrassing cough. There was considerable congestion of the lungs and his respirations were fifty per minute.

Privates McCarthy and Hennessey presented the same symptoms when I first saw them, but they grew rapidly worse, and for hours they were unconscious. Their lungs were edematous and their respirations were 80. Large doses of heart stimulants and cupping of the chest afforded relief.

Fifteen cases came under my observation, disclosing the fact that symptoms were the same in all.

DR. G. D. LADD—I saw Chief Foley in consultation with Dr. Hackett at about 10:15 p. m. It seems to me that the condition of the nine who inhaled the fumes was determined by the quantity inhaled, the length of exposure and their constitutional resistance. Four were fatal cases because of the extent of damage done, and the other five recovered, some of them suffering probably to the limit of the possibility of living, the others not so severely. In Chief Foley's case, I think, there was no toxemia except as a late result from the insufficiency of oxygen. In all the cases there was an irritation and not a cauterization. The first stage was one of dryness, the second of secretion. The quotation in Dr. Bennett's paper applied to these fatal cases exactly, even to the tenacious mucous of a lemon-yellow color. When I first saw the men, they were, of course, mentally shocked and somewhat panicky, but they were brave men and did not yield to that. But there was added the intense physical shock of having important organs suddenly incapacitated. In the case of Chief Foley the pulse was very weak, he was cold, the respirations were very rapid, and there was extreme restlessness. Each time he lay down the cyanosis increased. There were coarse râles which extended all over the lungs. I do not think that there was a direct toxemia; it was a fatal case of irritation of the lungs, death resulting from edema. The pulse responded to heart stimulants nicely for a time. At first the respirations were 50, then 60, later 80, and rapid exhaustion was inevitable. One of the men who had been conversing in the front office was suddenly taken with a convulsion—a complete convulsion with opisthotonos for several seconds. This man had no bronchitis. Since then I have learned that he is well, with the exception of weakness of the legs. This case differs from all the others; it was not panic and not hysteria. It seems to have been a toxemia.

As to treatment. Chief Foley had died before we could administer oxygen. Certainly nothing that treatment could have done, could have affected the case, nor any of the other four. Captain White died first and Chief Foley next; I think it was just a difference in degree, how much was compatible with life. And in these four cases, certainly, it was a degree that was fatal.

DR. J. J. MCGOVERN—I first saw Droney 9 to 10 hours after the fire. He was sitting in a chair, intensely cyanosed, his face, ears, lips and fingers were blue, the fingers under the nails almost black. I could not count his pulse at all; the respirations were extremely rapid, and coarse râles were audible at a distance. The condition was one of marked pulmonary edema. Upon stimulation he improved somewhat and slept for a short time. In the morning he relapsed, and under stimulants and oxygen he reacted somewhat, but died at noon. When I first saw him he expectorated a thick mucous resembling markedly that of croupous pneumonia on the fourth day. Toward morning expectoration became more difficult and in the forenoon ceased entirely. One peculiarity was the extreme prostration; I never saw so young a man so extremely prostrated in such a short time. He was absolutely helpless. The mucous membrane of the mouth and larynx was as perfect as in health, and I infer

from their appearance that the gases had no cauterizing effect on the bronchial tubes. I believe the case was first an acute congestion, which later became an edema. The condition was probably aggravated by exposure on that severe night.

I have looked up the literature, and only in Whithouse and Becker could I find a reference to similar cases. There I found the report of cases in which the conditions were exactly as I found them in Droney; first acute congestion, then pulmonary edema going on to death. In fifteen fatal cases described, the average duration of life after exposure was 22 hours. Droney lived just about 22 hours. In the literature, explanations as to the cause of the rapid congestion and edema do not quite satisfy me. Osler describes congestion and rapid edema produced by the inhalation of ether and hot and cold air. In Stengel's Pathology no reference is made to poisoning by nitrogen tetroxide. The appearance of the patient, the extreme blueness and the rapid progress of the condition lead me to believe that there was some degeneration of the blood —which could not be produced by the inhalation of hot or cold air. The age and physical condition of the four men who died figured, I think, as factors in determining the rapidity of dissolution. Chief Foley, the oldest, and Captain White, who was a large and fleshy man, showed least resistance; the two young men naturally resisted the longest. Why Captain Lancaster and the others lived is difficult to explain, unless it was that they inhaled less of the poisonous gas. It is possible that they inhaled just as much, but had greater resistance. The great decrease in power, especially of the right heart, in Droney's case, impressed me as remarkable. Whithouse and Becker speak of the acid condition of the stomach. Droney complained a great deal of burning in the stomach. Upon the administration of bicarbonate of soda, he belched up gas for about an hour, and was relieved.

DR. P. H. MCGOVERN—I had just a little experience with Mr. Droney. I saw him the last three hours of his life. I had seen Mr. Droney in the office the day before, the picture of health. The next morning when I arrived at his bedside I was surprised; he looked like a dead man. What little he could force out of expectoration was not mucous; it was blood serum, pure and simple, very tough and stuck to the fingers.

We used unslaked lime in hot water, thinking it would dissolve the mucous and assist expectoration, but there was no mucous to dissolve. By 9 o'clock the oxygen seemed to be of some advantage; he was grateful for the use of it, but in a short time he disliked it, but we kept the tube near his face. I think the nitroglycerine was a mistake. Carbonate of ammonium did not do much good. The digitalin and strychnine, if there had been time enough, might have been of benefit.

The lesson I drew is, that if I had another similar case, a man like Droney, aged 25 or 26, the picture of health, full of blood, I would bleed him and bleed him early, a pint or a quart, envelope his chest in an ice pack and administer morphine. Seen late as he was, an ice pack would depress him out of existence.

I think the condition was merely one of acute pulmonary congestion, followed by pulmonary edema. The right heart could not force the blood through the lungs and could not be made to force it through by stimulants.

DR. J. M. BEFFEL—In regard to the pathology, Dr. Bennett's paper refers to five conditions that might obtain, but it did not include, it seems to me, the

conditions that obtained in these cases. It spoke about the edema of the mucous membranes, but this edema and edema of the lungs are two different things, still this is as far as Dr. Bennett's paper goes. As the result of steam, hot air and chemical irritants to the mucous membrane, it is certain that we may get edema of the mucous membrane so extensive as to close up the openings, certainly that in the larynx, and to cause cyanosis and the symptoms of asphyxiation, and in a short time, death.

The condition of pulmonary edema has been brought out by Drs. McGovern. Excessive physiological activity is the first result of irritation of the mucous membrane, and was shown in all these cases, it seems to me, by the abnormal quantity of mucous poured out by the bronchial tubes,—the tough, tenacious expectoration. This, of course, can only be secreted where there are mucous glands, therefore, not from the bronchioles. We would then have first an occlusion of the larger bronchial tubes. Of course, the congestion of the mucous membrane is continuous. There is an extreme congestion of the pulmonary capillaries about the air cells, and the condition of edema results. Then we get a condition comparable to the third day of pneumonia in which we have rusty, brown sputum. Edema is the first condition that develops in lobar pneumonia—the pouring out of lymph from the over-distended capillaries. It does seem almost impossible for death to have occurred in these cases from ordinary broncho-pneumonia in such a short space of time, though it is possible. Of course, we do not know whether it was extensive broncho-pneumonia in the four fatal cases, or whether it was broncho-pneumonia and edema, and the extent of each. It seems to me to have been a commingling of the two,—broncho-pneumonia and edema. When we consider that a great proportion of the alveoli are occluded with serum, and that aeration must be carried on by those unoccluded, it is evident that the supply of oxygen must be greatly diminished, and, therefore, in my opinion, oxygen was certainly indicated in any or all of these cases.

DR. J. J. MCGOVERN—I might add that Droney's lungs in the beginning showed diminished resonance everywhere, becoming dull to percussion in the forenoon. There were no laryngeal symptoms.

DR. P. H. MCGOVERN—I noticed that Whithouse and Becker, quoting from the Deutsche med. Wochenschr., 1884, speak of an alkaline sputum in this class of cases, and, therefore, from this standpoint, the alkaline form of treatment would not mean very much.

DR. A. J. PATEK—It is deplorable that public feeling ran so high that autopsies could not be obtained. Without doubt, only one of the five causes of death mentioned in Dr. Bennett's paper obtained to any appreciable degree, that of edema following pulmonary irritation. I think that whatever blood changes took place were the result of the edema, and not that the acid itself or the fumes inhaled caused any destructive processes. As a comment on the statement made in Dr. Bennett's paper as to pleurisy having existed in the cases quoted, I might say that it seems unlikely for pleurisy to follow an acute poisoning of this character. It would appear that the pleurisy found must have been an antecedent condition, and not due to the poisoning itself.

DR. T. L. HARRINGTON—I certainly would not take the pessimistic view that Dr. Ladd has taken of these cases. He states that four were fatal cases because of the quantity of gas inhaled, the others recovered, he might have added by the grace of God. I believe we should take a different view, for our

own sakes and that of the fire department. Although death will follow the inhalation of a sufficient quantity of the gas, the question is how much was the condition of these men aggravated by attending a second fire. When the first symptoms manifested themselves proper precautions should have been taken. The lesson that I should like to see impressed on the department is, that if in the future similar conditions arise, the proper authorities at once send every man showing such symptoms to his home or to a hospital. Had Captain Lancaster been sent to a hospital when he gave the first symptoms—tightness across the chest, restlessness, inability to sleep—instead of going out to a fire on a stormy night, I believe the fight he had to make for life would have been much less difficult. It should be the duty of the department to provide proper care for the men who become disabled in the discharge of their work.

In regard to the question of blood destruction, I will say that Dr. Wilhelm Becker has, since this accident, been performing experiments on dogs, exposing them to the fumes of nitric acid. Microscopic and spectroscopic examination of the blood showed absolutely no changes. So I think the condition referred to by Dr. McGovern was aggravated cyanosis and not one of blood destruction. As to the question of bleeding, I do think that bleeding in the early stage in the vigorous and strong men might have been advisable. I think, perhaps, I would like to bleed internally with veratrum viride rather than externally. The use of veratrum viride is, however, questioned by some able clinicians. The one drug, as I stated, that gave me the most trouble to decide whether or not to use it, was morphine, and yet, when I did use it, I got the happiest results. The next time I would use morphine early in small doses, but sufficient to get the effect, to quiet the restlessness and prevent exhaustion, relieving the heart of some of its burden. Heroin had no effect along that line, and chloralamid not much.

We owe it to our patients that we as physicians give all our time and attention to these desperate cases, so as to meet emergencies as they arise. To do this means a sacrifice of time and a loss of other cases, but in the end we will be well repaid for the time and attention given.

CENTRAL WISCONSIN MEDICAL SOCIETY.

January 27, 1903.

The Central Wisconsin Medical Society met in its third quarterly session at the capitol in Madison, and in the absence of the President, was called to order by Dr. J. M. Evans of Evansville, at 10:30 A. M.

The secretary's report was read and accepted. There were present at the meeting: Drs. Bertrand of De Forest; Cutler of Verona; Em-

mons of Oregon; J. M. Evans Jr. of Evansville; J. L. Fleek and W. L. Stephenson of Brodhead; A. O. Kendall of Prairie du Sac; S. J. Moyer of Monroe; J. Noer of Stoughton; W. T. Pinkerton of Mazomanie; W. T. Sarles of Sparta; M. L. Harris of Chicago; C. H. Cary of Browntown; H. B. Gifford of Juda; Chas. R. Treat of Sharon; R. J. C. Strong of Arlington; A. S. Parker of Clinton; O. C. Thienhaus of Milwaukee; W. W. Stebbins of Mt. Vernon; E. P. Kermott of Richland Center; E. S. Christman of Spring Green; L. F. Bennett and A. C. Helm of Beloit; W. H. Palmer, J. F. Pember and J. F. Whiting of Janesville; F. F. Bowman, D. B. Collins, T. W. Evans, Clarke Gapen, L. R. Head, J. A. Jackson, H. R. Jackson, Elmer L. James, George Keenan, Selena Severson, Mila B. Sharp, P. R. Fox, W. H. Sheldon, W. W. Gill and C. S. Sheldon of Madison.

Upon motion a committee was appointed to report a plan of reorganization and affiliation with the State Medical Society in accordance with the plan proposed by the American Medical Association.

Drs. W. T. Sarles, C. S. Sheldon and J. M. Evans Jr. were appointed as such committee.

Dr. C. R. Treat of Sharon read a paper on "The Pharyngeal Tonsil"; discussed by Drs. Harris, Sarles, Cutler and the author.

The following applications for membership were received and referred to the board of censors: Drs. W. W. Gill of Madison; E. S. Christman of Spring Green; P. R. Fox of Madison, and E. P. Kermott of Richland Center.

The applicants were duly elected members of the society.

Dr. W. T. Sarles of Sparta read a paper on "Hay Fever"; discussed by Drs. Gapen, Stebbins, Pinkerton and the author. Dr. W. W. Stebbins of Mt. Vernon read a paper and reported two cases of "Congenital Obstruction of the Bowels"; discussed by Drs. Cutler, Harris, Thienhaus, J. A. Jackson and the author. Dr. L. M. Harris of Chicago read a paper on "Some Surgical Infections due to the Colon Bacillus"; discussed by Drs. J. A. Jackson, Keenan, Head, Sarles, Gapen, Sharp, Thienhaus and the author. Dr. J. A. Jackson read a paper on "Appendicitis, early Recognition and prompt Treatment"; discussed by Drs. Whiting, Harris, Moyer, Fleek, Noer and the author.

On motion the Society adjourned at 1:45 P. M. for the usual banquet which was held at the Park Hotel. There were 40 present and all enjoyed the festive occasion. Dr. Jackson of Madison acted as toastmaster with his usual grace and dignity, and the responses by Drs. Sarles, Harris, Evans and Whiting were unusually good.

AFTERNOON SESSION.

The Society was called to order at 3:30 P. M. by President Bennett. Dr. A. C. Helm of Beloit read a paper on "The Prevention of certain Deformities in Children"; discussed by Drs. Palmer, Sheldon, Strong and the author. Dr. A. S. Parker of Clinton reported a case of "Chronic Myocarditis with Complications"; discussed by Drs. Palmer, J. M. Evans and the author. Dr. R. H. Jackson of Madison read a paper on "Ectopic Gestation, Frequency and Importance of early Recognition"—with presentation of specimens; discussed by Drs. Harris, Sarles, J. A. Jackson, Keenan and the author. Dr. J. A. Jackson exhibited a patient to the society who had been operated upon by Dr. R. H. Jackson for abscess of the brain and a portion of the cerebrum removed.

The committee appointed to propose a plan of affiliation of the Central Wisconsin Medical Society with the State Medical Society in accordance with the plan proposed by the A. M. A. made a report as follows—which was adopted:

To the Wisconsin State Medical Association:

The Central Wisconsin Medical Society at its third quarterly meeting held in Madison, January 27, 1903, adopted the following resolution:

"That a Committee of five, consisting of the President, Secretary and three members be appointed by the chair, with full powers, to arrange for affiliation with the Wisconsin State Medical Association (as reorganized from the Wisconsin State Medical Society) as a combined county or district society in accordance with the plan of reorganization of the American Medical Association, and to appoint delegates to the Wisconsin State Medical Association."

In accordance with this the Chair appointed the following:

W. T. SARLES, Sparta, Chairman.
J. M. EVANS, JR., Evansville.
JULIUS NOER, Stoughton.
L. F. BENNETT, Beloit, President.
C. S. SHELDON, Madison, Secretary.

This Committee has discussed the subject thoroughly and believes that in the state of Wisconsin the organization of separate county societies for all the counties of this state, except for the counties of

Milwaukee,	Ashland,
Barron,	Dodge,
Douglas,	Manitowoc,
La Crosse,	Vernon,
Sheboygan,	Waukesha,

in which county societies now exist, and others that might hereafter be organized in well populated counties, is at present inexpedient and immature, and therefore request the perpetuation of the present local societies which have fairly well-defined geographic boundaries, and for ourselves do select the southwestern portion of Wisconsin as our district, which includes the counties of

Iowa,	Columbia,
Dane,	Richland,
Rock,	Sauk,
Juneau,	Monroe,
Crawford,	Green,
Grant,	La Fayette.

Should ten or more physicians, eligible to membership in the Wisconsin State Medical Association, three of whom are members of the Central Wisconsin Medical Society in any one of the above named counties included in our district, desire to organize a county medical society, we agree to permit the formation of such society and to constrict the boundaries of our district accordingly, provided that a charter be obtained from the Wisconsin State Medical Association for such purpose.

Nothing in this act shall be taken as intention to prevent or exclude any physician from belonging to any number of separate medical societies, county or otherwise.

Representation of the Central Wisconsin Medical Society to the State Medical Association by delegates shall be limited to the number of members selecting the Central Wisconsin Medical Society as their home organization.

For all other purposes, for the election of officers and for all business transacted within the Society, each member shall have equal voice and vote.

Our membership is the following: (Here comes list of members and addresses.)

We herewith subscribe to the Constitution and By-Laws of the American Medical Association and the Wisconsin State Medical Association and request enrollment as members of the State Medical Association and the American Medical Association, and that the following delegates be received by the Wisconsin

State Medical Association to represent us in its House of Delegates. (Here follows list of delegates selected.)

Respectfully submitted,

W. T. SARLES, Chairman.
L. F. BENNETT, President.
C. S. SHELDON, Secretary.

On motion the Society adjourned to meet at Beloit the last Tuesday in April.

FOX RIVER MEDICAL SOCIETY.

The regular annual meeting of the society was held at Green Bay, Tuesday, Jan. 20, 1903.

The meeting was called to order at Hotel Felch, by the president, Dr. C. D. Boyd, of Kaukauna.

A paper was read by Dr. H. B. Favill, of Chicago, on "A Relationship between Intestinal Conditions and Temporary Nephritis." The writer alluded to the difficulty of classifying the various forms of nephritis, and the danger, here as elsewhere, of emphasizing the anatomical change in the disease and naming it from the lesion produced, rather than recognizing the morbid process which precedes the lesion. In toxemias which produce nephritis, tonsillitis, etc., we should recognize the fact that every cell in the body is subject to the toxic influence. Thus we are greatly aided in forming an adequate picture of the pathologic process as a whole, and in formulating an effective treatment. The term Bright's Disease is a misleading one, and should be abandoned, even if we resort to a purely clinical nomenclature.

Some cases of great interest were related to show the relationship often existing between intestinal conditions and temporary nephritis; notably the history of a patient in whose case, on account of the gravity and obscurity of the symptoms, Dr. Fenger was called in consultation. The patient had vomiting, abdominal pain, general tenderness, profound prostration bordering on collapse, with a temperature of 103°, and pulse 130. The picture was that of profound septic ab-

sorption and strongly suggested perforation of the bowel. On account of the absence of definitely localized symptoms no operation was performed. In 12 hours nephritis with renal insufficiency developed, with blood casts, etc. Under proper eliminative measures the intestinal toxemia was removed and prompt recovery took place.

A paper was read by Dr. R. C. Faulds, on "Hints from Daily Practice." The paper referred especially to fractures, and emphasis was laid on the importance of caution in prognosis with reference to possible mal-practice suits. Several cases were referred to in illustration of this subject.

A paper was read by Dr. H. V. Wuerdemann, of Milwaukee, on "Injuries to the Eyes," with particular reference to first dressings. The importance of care in attending to even trivial injuries of the eyes was brought out, and definite and very practical suggestions were made for the general practitioner in his treatment, both for cases which he subsequently sends to the specialist, and those which he continues to attend. The value of antiseptic and aseptic measures, of attention to the nose to avoid infection by way of the tear duct, of proper use of bandages and dressings, etc., were brought out in a very helpful manner. Also the desirability of avoiding free use of cocaine, which retards healing and tends to cause the corneal epithelium to exfoliate. Very useful directions were given for removal of powder stains with peroxide of hydrogen and papoid in glycerin.

The following officers were elected for the coming year: President, Dr. P. J. Noer, of Menominee, Mich.; 1st vice-president, Dr. J. R. Minahan, of Green Bay; 2nd vice-president, Dr. J. J. Bellin, of Wrightstown; secretary and treasurer, Dr. J. S. Reeve, of Appleton.

About fifty members and guests sat down to the annual banquet, which was followed by several toasts most felicitously responded to by Dr. Favill, Dr. Noer, and others.

Arrangements were made for the affiliation of the society with the State Medical Society, as a combined county and district society, according to the plan of reorganization of the American Medical Association.

BOOK REVIEWS.

DISEASES OF THE ORGANS OF RESPIRATION. A Treatise on the Etiology, Pathology, Symptoms, Diagnosis, Prognosis, and Treatment of Diseases of the Lungs and Air Passages. By *Samuel West*, M.A., M.D., F.R.C.P., Assistant Physician and Lecturer on the Principles and Practice of Medicine at St. Bartholomew's Hospital; Senior Physician, Royal Free Hospital, etc., etc. London, Charles Griffin & Company, Limited; Philadelphia, J. B. Lippincott Company. 2 vols., 913 pp. Price, $12.00.

There are two classes of text-books in the market at the present time. The one is on the compendium plan, the subjects being considered in a brief and dogmatic manner, and in mere outline. This is the style of text-book that is believed to be specially adapted to the needs of the undergraduate student, and to the wants of that proverbial person the "busy practitioner," both of whom are supposed to refer to such a book in great haste to find out "what is good for pneumonia." Such books presuppose a limited knowledge of etiology, pathology and the general principles of treatment, and are, and ought to be, less and less in demand.

The other class is the exhaustive monograph, either on a single subject or upon a group of allied subjects, and the encyclopedic work, consisting of a large number of monographs by many writers. The work before us is, as its title indicates, a monograph upon a group of allied subjects, diseases of the respiratory organs.

There are points of advantage in the encyclopedia, and there are points of disadvantage which have been sufficiently recognized, the main objection being that there is more or less repetition, and this appears to be inseparable from the method.

Where an entire text-book, for example on the Practice of Medicine, is the work of one man, the disadvantage of repetition is obviated, but there are few, and there must in the future be fewer men so broad in education, culture and experience that they are able to write with equal authority upon the large number of subjects involved in such a work.

The last decade has produced a new type of physician, a man thoroughly trained in the elementary sciences, and deeply imbued with general principles, who does not prescribe quinine because he has been told that it is "good for this or that," but who prescribes with

a definite object, and upon well-thought-out principles. The future is bound to see an ever increasing proportion of such men in practice, and it is to meet the requirements of such that the bookmakers must bend their energies. Such men want to know all that is known upon the various subjects that interest them, and to them the monograph will be most acceptable and profitable.

The book before us appeals to the 20th century physician; it is the fruit of many years of study, observation and experience, and deals with a group of diseases of limited number; but, limited as they are, it is only to be expected that a rather careful examination will disclose the fact that there is considerable difference in the value of the various sections of the work.

The section on emphysema is on the whole satisfactory, the author adopting the nutritive theory of the causation of this disease. In the treatment of emphysema it appears to the reviewer that sufficient emphasis has not been placed upon the necessity of avoiding the causes of dyspnea, and upon the utility of developing, by active exercises, the expiratory muscles.

The section on pneumonia is particularly good, but the author continues to give alcohol the preference as a cardiac stimulant, although he also advises the administration of strychnia for this purpose. The author's opinion as to the cause of cardiac oppression is left somewhat in doubt by the statement, on page 256, that "the circulation, through both lymphatics and blood-vessels, remains free throughout," and the further statement, on page 308, that "owing to the obstruction to the circulation in the lungs" the right heart becomes over-distended with blood.

The remarks on the treatment of bronchiectasis are extremely unsatisfactory.

In the treatment of hemoptysis he sanctions the use of ergot, although he admits that there are theoretic objections thereto.

It is somewhat disappointing to find no attempt made to explain why the exudate in many cases of pleurisy is sero-fibrinous and in others purulent, the etiologic factor being the same in each.

In the treatment of pulmonary tuberculosis the author does not advocate the use of tuberculin or any of its modifications, in this respect holding the same views as are entertained by the best men in this country. While some space is devoted to the surgical treatment of tubercular cavities and diseased pulmonary areas, no mention is made of Murphy's contribution to the literature of this subject.

The short historical sketches that occur here and there throughout the two volumes add special interest and value to the work. On the whole this work is to be recommended to those who wish to keep in touch with English opinion in this important branch of medical science. (W. H. W.)

HERMANN VON HELMHOLTZ. *Leo Koenigsberger,* Heidelberg. Volume I. With 3 portraits in heliogravure. Braunschweig, Friedrich Vieweg and Sohn, 1902. Cloth, 10M. ($2.50). Half Morocco, 12M. ($3.00).

We take great pleasure in announcing the appearance of this excellent biography of von Helmholtz, which is of the greatest interest to the whole scientific world and large circles of educated laymen. Physicians will be particularly benefited and rejoiced by the study of the personal and scientific development of this great man, who inaugurated a new era of ophthalmology by his invention of the ophthalmoscope and his admirable handbook of physiological optics, and who was the deepest explorer of the physiology of the nerves, muscles and sensory organs, to say nothing of his masterly achievements in physics and philosophy. The author says in the preface that personal and scientific relations to Hermann von Helmholtz, existing for many years, and the urgently repeated requests of his late widow, Mrs. Anna von Helmholtz, were for him the incentive to write a biography of the eminent scientist. He was materially supported by the relatives of v. H., especially his daughter, Mrs. Ellen von Siemens, and a large number of celebrated scientists and personal friends who placed letters and communications from and to H. at his disposal. He also had the official papers of H., deposited at the Prussian administration of education, at his command. Thus K. admirably succeeded in giving an extensive picture of the life and the works of the great investigator with thorough conception of his extraordinary scientific importance, and the harmonious trend of thought and action of the human side of this superior man. The book is very handsomely gotten up, one of the heliogravures is made after a daguerrotype of 1848, and one after the portrait of Lenbach, of 1876. The present volume concludes with the year 1861, when H. was Professor of Physiology at Heidelberg. The second volume will appear soon.

(C. Z)

A TREATISE ON DISEASES OF THE EYE, NOSE, THROAT AND EAR, FOR STUDENTS AND PRACTITIONERS, by Various Authors. Edited by *William Campbell Posey*, A.B., M.D., and *Jonathan Wright*, M.D. Illustrated with 650 engravings, 35 plates in colors and monochrome; published by Lea Bros. & Co., Philadelphia and New York, 1903.

This excellent text and reference book, gotten up somewhat on the style of the American Text-book series, combines the diseases of the four special organs (eye, ear, nose and throat). Presupposing a knowledge of the anatomy and physiology of these parts, separate chapters on these subjects have been purposely omitted, but sufficient information is found under the different headings to demonstrate their symptomatology and pathology. One pleasing feature is that the majority of the contributors are American.

Typographically the book is excellent and well illustrated: while there are numerous familiar old wood-cuts, the large number of new and original illustrations are refreshing and very instructive. In some cases credit has not been given for illustrations inserted, which will no doubt be corrected in the second edition.

The various collaborators, many of whom are among the most eminent of the profession, have handled their special subjects in a most satisfactory manner.

Altogether the book is to be commended as a well arranged treatise on the subject. (N. M. B.)

CURRENT LITERATURE.

MEDICINE.

W. H. Washburn, M.D., Jos. Kahn, M.D., O. H. Foerster, M.D.

Metabolism in Albuminuria. CHARLES P. EMERSON has undertaken the study of a series of cases of nephritis with a view of determining, if possible, some of the influences governing the amount of albumin in these cases. His first paper (*Johns Hopkins Hospital Reports*, Vol. X, Nos. 6-9) contains the results of a careful study of ten cases with special reference to the albumin and nitrogen excretion, from which he draws the following conclusions:

1. The percentage of albumin is the best index for the course of a case of albuminuria.

2. In many chronic cases of nephritis there is an acute process in progress, and it is this latter which governs the course of the disease. Variations in the course of this acute process are shown by (a) increase in albumin per cent; (b) slight rises in temperature.

3. In governing the diet in nephritis slight rises in temperature should be taken as evidence that the diet is unsuited to the case.

4. While the acute process is active milk is the best diet, not too much, and properly diluted. After the acute process has subsided the patient may even benefit from additions of bread and butter, rice, fruit, or even later of meat.

5. If the day and night urine be studied separately, in addition to the points observed by Quincke, Iljisch, and Laspeyres, it was found that

a. The line of water excretion for the days is practically parallel to that of the night, but the changes in the night preceding give the curves the appearance of being the reverse of each other.

b. The albumin per cent. of day urine is practically always above that of the night.

c. In the night urine the albumin and nitrogen lines are practically parallel, showing some definite relation between the excretion of these, and the percentage of each varies inversely as the amount of urine to a certain degree. (J. K.)

Treatment and Causation of Angina Pectoris and Allied Conditions. BREUER (*Münch. med. Wochenschr.*, Nos. 39, 40, 41, 1902) supports the theory of Huchard, and considers true angina pectoris with its violent, usually retrosternal and radiating pain, its sensation of impending dissolution, and severe depression, to be the consequence of a sudden ischemia of the heart muscle. In individuals thus attacked the coronary arteries are sclerotic, or the aorta shows sclerotic changes in the neighborhood of the coronary openings. In both instances the arterial supply to the heart muscle is just sufficient during rest, but becomes insufficient as soon as heart action is increased by bodily exertion or by any process increasing arterial pressure, the resulting relative anemia causing the stenocardial attack. Angina pectoris is therefore analogous to the phenomena of intermittent claudication. The cardiac weakness, formerly looked upon as the primary cause (Parry-Traube theory) of angina pectoris, is a secondary phenomenon, due to the anemia of the muscle and proportionate to it. Attacks of true angina pectoris always follow upon increased muscular effort, which differentiates them from pseudoanginal attacks occurring spontaneously or as the result of mental emotion. Huchard recognizes four varieties of pseudoangina pectoris—nervous, especially in hysterical individuals; reflex-gastric, observed especially in dyspeptics; neuritic, the result of neuritis of the phrenic or vagus nerves; toxic, in nicotin poisoning. In the toxic form spasm of the coronary arteries occurs, without anatomical change or decrease in the lumen of the vessels—functional coronary angina.

In the treatment of angina pectoris two groups of drugs are useful, one during the attack (morphine, amyl nitrite, nitroglycerin) and the other for

the prevention of the paroxysms. In the attack morphine is an invaluable drug. In the latter group erythronitrol, nitroglycerin and the iodides have been recommended, but Breuer has obtained the best results with theobromin, which not only reduces the frequency and intensity of the attacks, but occasionally secures their entire cessation. Theobromin is best given in the form of diuretin (theobr.-natrium salicylicum) either in aqueous solution with the addition of aquae menthae, or in powders, each 0.5g. The usual beginning daily dose of diuretin is 3-3.5g., which if successful in preventing the attacks is to be gradually reduced until the minimal amount preventing the attack is found, usually 2.5-2g. per day, which may be taken for weeks without unpleasant effects. It is important to distribute the daily dose equally over the 24 hours, in order to prevent nocturnal paroxysms. Diuretin did not produce gastric disturbances, although headache was sometimes observed. The cases reported in detail by Breuer, in which theobromin or diuretin have been effective in controlling the attacks, include not only instances of true angina pectoris but such allied conditions as aortic, aneurysmal, and nicotin angina pectoris, and several cases with severe gastric and abdominal cramps, some of which at autopsy showed arteriosclerosis of the abdominal aorta and its branches. Headaches of an arteriosclerotic origin were likewise successfully treated with diuretin or agurin. Theobromin and its derivatives appear to act by diminishing the reflex irritability of the arteriosclerotic vessels and thus preventing the occurrence of spasms. Like the nitrites they are effective only during the period in which they are taken; the attacks reappear as soon as their use is discontinued. (O. H. F.)

Epigastric Pain of Angina Pectoris. The observation of many cases of epigastric pain associated with rudimentary or fully developed attacks of angina pectoris or their equivalent, lead Kaufmann and Pauli (*Wiener klin. Wochenschr.*, No. 44, 1902) to a study of the epigastric pain of angina pectoris. They recognize three types:

1. In which the epigastric pain is part of the complete, fully developed attack of angina pectoris. Pseudogastralgic pains are characterized by Huchard as follows: they occur independently of the taking of food, are always associated with changes in the pulse, appear almost regularly upon physical exertion, disappear on rest, are of short duration, and even when involving only the epigastric region are associated with paraesthesia or pain in the left arm, and with the fear of death. K. and P. report a case of this type in which great tenderness of the aorta also existed. Treatment with diuretin 4.0g. and sodium iodide 0.5g. daily was productive of good results.

2. A type in which the epigastric pain, cramplike in character, and affecting individuals with diseased vessels, is not combined with a fully developed attack of angina pectoris. The upward radiation of the pain from the epigastrium into the arm, etc., is absent, although the pain is frequently associated with increased heart action and a sensation of fear. The pains have the same causes as those of the first type and are influenced similarly by rest and vascular therapy.

3. The type in which isolated, paroxysmal epigastric pain occurs, which on closer analysis is found to be identical with the pain accompanying stenocardiac conditions.

The individuals affected are generally advanced in years, and always present evidence of disease of the vascular system, which may range from cardiac insufficiency and loss of compensation to changes so slight as to require careful search for their discovery. The epigastric pain is generally provoked by physical exertion, often after definite movements, such as climbing stairs, or it may appear when the horizontal position is assumed. Large quantities of food of any kind, or small amounts of readily fermenting food have a causative influence in the production of an attack. The pain in some cases is the precursor of an attack readily recognized as angina pectoris. The pain is severe, generally cramplike in character, and is situated in the epigastrium or in the umbilical region, being referred to by the patient as "stomach ache." It varies in duration from several minutes to hours. During an attack, and to a less degree between attacks, there is found tenderness of the abdominal aorta, with pulsation, either limited to the epigastrium or extending along the aorta and iliacs.

The writers have found diuretin to be the most valuable remedy in this condition, either given alone or with iodides. It often acts promptly, sometimes more slowly, and it may be necessary to intermit its use for a time. Rest and precaution as to overloading of the stomach are essential parts of the treatment. (O. H. F.)

The Treatment of Pleurisy with Effusion. FRANCIS DELAFIELD (*Amer. Journal of the Med. Sciences*, Dec., 1902) discusses this subject with special reference to the adequacy of treatment by aspiration to the exclusion of medicine. He believes that aspiration is to be used not simply to remove the fluid from the thorax, but to cure the morbid process which has caused the effusion. In accordance with this belief he proposes that aspiration be performed as soon as the presence of fluid in the chest is made out.

Two hundred cases of pleurisy with effusion, treated by aspiration in the Roosevelt Hospital from 1886 to 1901, are tabulated.

From a study of these cases the conclusion is reached that the inflammation had been active up to the time of the aspiration, and that the time which elapsed from the date of the aspiration to complete recovery ranged from a few days to six weeks, although in the cases in which aspiration was performed early the recovery was most prompt. He states that in private practice the results are better than in hospitals, and that in many cases within twenty-four hours after one aspiration there is no more fluid and no more pleurisy. (W. H. W.)

Albuminous Expectoration following Thoracocentesis. HERBERT W. ALLEN (*Johns Hopkins Hospital Bulletin*, Jan., 1903) reports a case of pleural effusion in which, after a third tapping during which 3100 c. c. of fluid were withdrawn, the patient complained of slight shortness of breath and of a smothering sensation. After about half an hour he had a series of severe paroxysms of coughing, each being followed by profuse expectoration of serous, frothy sputum. This continued for one hour when the symptoms gradually subsided, but the patient continued to expectorate for two or three hours longer. The expectoration was of a pale green color, translucent and on stand-

ing deposited a muddy sediment. Treated with nitric acid it gave an abundant precipitate of albumin.

Four theories have been advanced to explain the phenomenon of albuminous expectoration: perforation of the lung by the trocar, spontaneous perforation of the lung, reabsorption of the fluid remaining after thoracocentesis, and acute edema of the lung. The last of these is the most probable, but the exact mechanism by which the edema is produced is still an unsettled matter.

Cohnheim has shown that the permeability of the vessels in a lung which has been compressed for some time, is greater than that of a healthy lung. Most observers would explain the edema by reason of this abnormal permeability and the rapid engorgement of the lung which follows the withdrawal of the pleural effusion.

Oertner, in a study of twelve fatal cases, concludes that the edema has for its immediate cause an abnormal permeability of the blood vessels of the lung, aided frequently by cardiac insufficiency. The sudden emptying of the pulmonary vessels causes increased flow of blood to the left heart; this is unprepared for the extra exertion and there results a disproportion in work between the right and left heart and consequently lung edema. This edema is the more easily produced when, owing to adhesions, the mediastinum is prevented from assuming its normal position as the effusion is drawn off.

West suggests that a careful study of the lymphatics in these cases might aid in a solution of the problem.

W. C. DREIN (*American Medicine*, Jan. 3, 1903) reports a case of pleurisy in which, two hours after the removal of 1620 c.c. of fluid by aspiration, severe paroxysms of coughing with intense dyspnea set in, accompanied by the expectoration of increasing amounts of an albuminous fluid resembling that obtained from the pleural cavity. Death occurred within eight hours after tapping, with symptoms of pulmonary edema.

A. J. PATEK (*Amer. Medicine*, Aug. 23, 1902) reports a case—not fatal—in which the expectoration of about 750 c.c. of albuminous fluid came on shortly after thoracocentesis had been performed, and lasted for two and one-half days. The symptoms were those of pulmonary edema. (J. K.)

The Problem of Infection and Immunity in Tuberculosis and the Issues Involved. SIR HUGH R. BEEVOR (*Lancet*, Jan. 10, 1903) discusses these problems in the light of recent research in English sanitoria, laboratories, and a study of vital statistics, and is convinced, as a result of such investigation, that too much importance has latterly been attached to the infectious nature of the disease, and too little significance has been placed upon natural immunity, and sociologic considerations.

He earnestly hopes that the medical profession at large will not encourage the public to avoid their tuberculous fellow men. Such avoidance he believes not only unnecessary, but thinks it will infallibly swell the ranks of the unemployed, depress the spirits of the tuberculous wage-earner, empty his pockets and ultimately reduce his family, through want and distress, to such a condition of low vitality as to render them liable to tubercular infection.

He believes that the disease is not highly infectious, that it does not require isolation except under unusual conditions, that under ordinary circumstances it does not appear to be infectious at all, that healthy people enjoy extraordinary immunity, and finally urges upon the profession at large the importance of so instructing the people, emphasizing the further fact that fresh air and open windows are a great armor against its attacks. (W. H. W.)

SURGERY.

F. E. Walbridge, M.D., H. A. Sifton, M.D., F. Shimonek, M.D.

Abdominal Rigidity. DR. JOSEPH A. BLAKE (*New York Med. Journal*, Jan. 31, 1903) gives a clear clinical account of abdominal rigidity as a diagnostic symptom. He says that it is often one of a group of symptoms that leads us to a definite conclusion. When there is well marked rigidity it is unmistakable, but when slight it may be confounded with voluntary contraction. The extent of rigid abdominal wall is a good index to the extent of peritoneal involvement.

Abdominal rigidity is caused by irritation of the peritoneum before time sufficient for inflammation to commence has elapsed. Hemorrhage or the escape of urine or of the contents of the stomach into the peritoneal cavity will cause abdominal rigidity before inflammation has begun.

Abdominal rigidity is a constant symptom in acute peritonitis and is usually absent in the chronic forms. Rigidity is not present in obstruction of the bowels unless peritonitis is present.

Blake says: "There is one condition in which it seems to me, it is of great value; namely, as a sign indicative of perforation in typhoid fever. It is manifest as soon as local peritonitis results from implication of the peritoneum by the ulcerative process, and is marked as soon as perforation occurs. Absence of rigidity in a case of supposed perforation is a contra-indication to operation." Pain and rigidity may be present in the upper portion of the abdomen in pleurisy, especially when the diaphragmatic pleura is involved. (F. E. W.)

Subdural Interposition of Rubber Tissue without Removal of the Gasserian Ganglion in Operations for Tic Douloureux. DR. ROBERT ABBE (*Annals of Surgery*, Jan., 1903) says: "The question of the removal of the Gasserian ganglion in every case has recently been advocated as the proper course for a surgeon to pursue. My own experience leads me to oppose this advice."

He then quotes from Dr. Leer, assistant at von Bergmann's clinic, a résumé of 201 cases. Of these 17 per cent. were fatal, 28 died without regaining consciousness. Abbe says: "Thus we cannot fail to be impressed with the increased gravity of operation when the Gasserian ganglion is operated on."

He then describes his operation in detail, which is, briefly, a separation of the nerve trunks from the ganglion and division of each at the foramen

of exit. A piece of thin gutta-percha tissue one and one-half inches long and three-fourths of an inch wide is laid over both foramina.

Abbe concludes as follows: "I think I have demonstrated (1) that the operations upon the ganglion have been carried to an unnecessary degree of severity; (2) that the resection of one-fourth or one-half inch of the nerve anterior to the ganglion and within the cranium, with the interposition of rubber tissue, can be relied upon for a perfect cure, up to six years at least, with probability of permanency as great as by any method; (3) that it is a simple, speedy and safe method, and thereby fulfills the highest aims of the best surgery." (F. E. W.)

Fractures of the Patella. F. BRAUCHMANN (*Inaugural Dissertation, Heidelberg*, 1902, *Treatment of Patellar Fractures by Suture*), quoting Helferich, says: "The better the apposition of a fracture the better the union and subsequent function." Healing of the fracture by primary intention is the most perfect because of the production of new bone. A ligamentous union of the patella, even though the diastasis be small, does not possess the normal strength. The chief purpose in the treatment of fractures of the patella must consequently be to secure bony consolidation. The variable results of non-surgical treatment are dependent upon the complication of laceration of the capsule and on the injuries of the extension apparatus. In treating fractures of the patella the following conditions are to be considered:

1. Separation, pressing out of place and a rotation of the fragments through the traction of the quadriceps or resulting from a blood exudate.

2. Interposition of soft tissues between the fragments from the upper coverings of the patella, shreds of the prepatellar synovial sac, tendon or periosteal tissues.

The non-surgical treatment varies from the simplest to the most complicated, depending upon the extent of the injury, or upon the injuries complicating the patellar fracture, as extensive laceration of the capsule, comminuted fracture, rotation or tilting of the fragment, interposition of soft tissue.

Aseptic surgery has removed the fear of making an incision and uniting the fragments with silver wire, silk or catgut, as well in recent cases as in old ones with wide separation of the fragments. No other method makes bony consolidation as possible, but it is necessary to radically correct everything which makes bony union impossible, as the removal of the blood exudate, of the interposed fascial tissue, of loose bony fragments, and the thorough apposition and fixation of the fragments. Incision affords a thorough inspection and does not leave the surgeon in the dark as all other methods do. (F. S.)

Surgical Treatment of Rheumatic Fever. JOHN O'CONOR (*Lancet*, January 24, 1903) advocates the opening and drainage of the affected joints in all cases which do not yield promptly to the ordinary rheumatic remedies.

He reports twenty cases in which this procedure was practiced. In some of the cases as many as five joints were opened at one operation. From his experience, as detailed in the twenty cases reported, he is firmly convinced that all protracted cases of rheumatic fever affecting the larger joints should be treated by this method. He thinks that if careful aseptic technique is followed, one or more joints can be opened without danger; that drainage can be maintained for four or five days and then dispensed with, and that healing of the joint will promptly take place without damage to its function.

(H. A. S.)

Surgery of the Biliary Passages. MAYO ROBSON (*British Medical Journal*, January 24, 1903) contributes an article on modifications and improvements in the operations on the biliary passages. He reviews his work of the last twenty years, pointing out wherein experience in the various operations has led him to improve. One of the most important points to which he calls attention is the modification in the incision which he makes to expose the common bile duct. Instead of elongating the incision which is made in the middle of the rectus downwards to obtain more room, he lengthens the incision upwards towards the ensiform cartilage, thus enabling him to bring the upper edge of the liver more fully into the wound. After separating adhesions, if present, he seizes the gall bladder and uses it as a retractor to lift the liver and bile ducts up into the wound so as to be able to easily manipulate them. He believes that all stones should be cut down upon and removed—not crushed in the bile passages. He uses drainage in all cases—either gauze alone or gauze surrounded by a split tube. He always stitches the drainage in position with catgut which prevents it from becoming displaced. He advocates the removal of all small, contracted gall bladders, and reports a number of cases in which secondary operations were necessary to remove gall bladders which had been previously drained. He speaks of enlargement and chronic inflammation of the head of the pancreas which suggests malignant disease, as often recovering after drainage of the biliary passages. (H. A. S.)

Situation of Gall-Stones. In 104 cases of cholelithiasis, MERK (*Inaugural Dissertation, Heidelberg*, 1902) found the stones located as follows:

Gall-bladder	26
Ductus cysticus	13
Ductus choledochus	3
Gall-bladder and ductus cysticus	36
Gall-bladder and ductus choledochus or hepaticus	10
Gall-bladder and ductus cysticus and choledochus	5
Gall-bladder and ductus cysticus, choledochus and hepaticus	2
Without and partially within the bile passages	9

(F. S.)

GYNECOLOGY AND OBSTETRICS.

A. W. Gray, M.D., Wm. Thorndike, M.D., E. W. Kellogg, M.D.

The Mechanism of Labor, and Instrumental Assistance when the Head is Transverse in the Pelvic Brim. WILLIAM GILLESPIE (*American Journal of Obstetrics*, January, 1903) details a new method of high forceps manipulation, which he says is to be used in preference to version when from any cause the after-coming head is apt to be delayed. He applies the forceps to the sides of the head in his method, claiming that application to the forehead and occiput the usual text-book direction, gives the child little better prospect than craniotomy; for the occipital bone is generally driven under the parietals, causing injury which is fatal before or soon after birth.

In cases when the conjugate at the brim is narrowed, it has been demonstrated that the resistance of the pubes is at first greater than that of the promontory, and the pubic side of the head is held back, the sagittal suture approaching the pubes. Later the sharp promontory begins to indent the posterior parietal and it becomes the point of chief resistance; the head then rotating around the promontory and becoming engaged. The position of the sagittal suture therefore denotes the amount of progress.

This mechanism is taken advantage of in manipulating the forceps. The physical condition present makes the application and use of instruments easier than would at first appear. The head is transverse of the pelvis and approaches that side toward which the occiput is directed, leaving the other side comparatively free through which the anterior blade is carried by a spiral movement. If the occiput points to the left ilium the first blade is applied, upon the flat, directly into the hollow of the sacrum between the head and the posterior lip of the cervix. The right blade is applied upon it, and then by a spiral movement is brought through the right side of the pelvis, past the forehead, upon the anterior side of the head, until it rests under the pubic arch. The pelvic curve of the blades carries their tips well to the left of the promontory, so that they grasp the occiput. To secure a good application the handles should be as nearly as possible perpendicular to the vault. Grasping the handles firmly, make traction forward in order to fix the head firmly in the brim, then without relaxing traction, swing the handles backward toward the sacrum. The head rotates round the promontory and enters the pelvis with a jerk; which is the signal to relax and carry the handles to the left side of the woman, thus carrying the tips backward for a more secure hold, for the increased flexion of the head on entering the pelvis will cause the blades to slip over the occiput if traction is continued. Again gripping the handles, swing them forward in the arc of a circle, bringing the head into the oblique diameter; after which delivery is the same as in ordinary forceps cases. (A. W. G.)

Puerperal Eclampsia. EDWARD T. ABRAMS (*American Journal of Obstetrics*, January, 1903) in a general article on this subject, mentions the fact that enlargement of the thyroid gland appears about the sixth month in

primiparae and about the fifth month in multiparae, and states that Lange's experiments have demonstrated this hyperplasia to be physiological. In 133 cases of pregnancy decided enlargement occurred in all but 20, and in 18 of these albuminuria was found; 6 terminated in eclampsia; in 4 all the premonitory symptoms, severe headache, dullness of vision, etc., were present, and convulsions were averted only by prompt and vigorous treatment. In view of these observations Abrams has used thyroid extract in prophylactic treatment, together with the usual methods, with satisfactory results.

(A. W. G.)

Puerperal and Gestational Paralyses. CHARLES J. ALDRICH (*American Journal of Obstetrics and Diseases of Women and Children*, Sept., 1902) gives a classification and brief description of each variety of gestational and puerperal paralysis, with cases; hysterical paralyses are not included.

Central gestational paralyses.—Hemiplegias are due to hemorrhage, embolism, anemia, or uremia in order of frequency. Monoplegias and paraplegias are very rare.

Peripheral gestational paralyses are either toxic or traumatic in origin. The toxic variety usually appears in women weakened and cachectic from prolonged and intractable vomiting, but as this feature is absent in some cases, it is likely that some toxin is responsible. The clinical picture is usually that of a pure motor neuritis. The author believes that most of the cases of so-called traumatic paralysis are ischemic in origin, pressure in the pelvis interfering with the circulation. Central puerperal paralyses are not common. Embolism is the most common cause; hemorrhage from hydremia of pregnancy has been recorded. Cerebral monoplegias are very rare. Peripheral puerperal paralyses are traumatic and non-traumatic, the latter being sub-divided into septic and non-septic. Traumatic puerperal paralyses are purely contusional, usually after forceps operations, or are due to pressure of exudations which are either septic or non-septic. In the non-traumatic septic variety single nerves may be affected or there may be extensive polyneuritis; likewise in the non-traumatic non-septic class. An extensive bibliography is appended. (A. W. G.)

Relation Between Bladder Disturbances and Myoma Uteri. Prognosis. WILHELM HAHN (*Münch. med. Woch.*, Oct. 7, 1902) after mentioning the various accepted causes of cystitis in women—including catheterization with bacterial infection, retention due to different causes, etc., states that tumors of the uterus, myoma especially, must be considered an important etiological factor in the causation of cystitis. Tumors limiting the movability of the uterus in any way may cause direct or indirect pressure on the bladder, thereby diminishing its capacity and interfering with its function of elimination. Cystitis follows, due to the degeneration of the residual urine. He says that myoma, giving rise to none of the usual symptoms—hemorrhage, pain, or dysmenorrhoea—may be the direct cause of bladder disturbances, and cites the case of a woman, past the climacteric, who had marked bladder trouble due to a large myoma, which otherwise gave rise to no disagreeable or dis-

abling symptoms. Extirpation was followed by a complete clearing up of the bladder trouble. Hahn considers that this factor must be taken into consideration in the question of an operation on a myomatous uterus which otherwise gives rise to no disturbing symptoms. (W. T.)

Infection of Ovarian Cysts During Typhoid. Report of Two Cases. Operation, Relapse, Recovery. MORRIS J. LEWIS and ROBERT G. LECONTE (*Amer. Jour. Medical Sciences*, October, 1902) have found but six similar cases reported in the literature, their cases differing from these six in that the operation in their cases was followed by a relapse and a fever. They differ from five of the six, in that their operations were performed within a few weeks of the beginning of the typhoid fever, while in these five, three to eight months elapsed before the operation. Their first case ran for three weeks the course of a moderately severe typhoid. "During the fourth week the character of the temperature changed and began to assume a hectic type." Vaginal examination showed a fluctuating, tender tumor in Douglas' cul de sac. This was opened per vaginam and a quart of fetid pus evacuated. Cartilage and bone were palpated in the cyst wall, and a diagnosis of suppurating teratomatous cyst was made. The bacillus typhosus was found in large numbers in pure culture. A typical typhoid relapse followed. The second case is a counterpart of the above: operation to evacuate a suppurating ovarian cyst, pure culture of typhoid bacillus from the pus, relapse of fever, and recovery. In both cases the relapse occurred five days after the operation. The writers do not think that the relapses were due to freeing of imprisoned bacilli, partly because they occurred so soon after the operation, and partly because it is the general opinion that the typhoid bacillus must enter the intestines in order to work specifically. They do not offer an explanation of the cause of the relapses. (W. T.)

Diagnosis and Treatment of Genital Tuberculosis. According to SELLHEIM (*Münch. med. Woch.*, Oct. 7, 1902) the points tending to a diagnosis of tuberculosis in an inflammatory process in the pelvis of women are: (1) History of tuberculosis in other members of the woman's household and (2) tuberculosis of other organs of the patient. Local examination makes diagnosis sure. The presence of nodules in the pelvic peritoneum is suggestive of tuberculosis. These are common on the posterior surface of the lateral ligaments, in the sacro-uterine ligaments, and on the posterior surface of the fundus uteri. Well marked, hard, beaded thickening of the tubes is characteristic of a tubercular process. Nodules in the pars uterina is an unquestionable sign of the disease. Microscopical examination of the mucous membrane of the uterus is always of weight in tuberculosis of the tubes or of the pelvic peritoneum. The author considers a diagnosis in most cases possible, contrary to the opinion of other writers, and claims good results in 28 cases treated palliatively, and in 57 operative cases in a series of 65. (W. T.)

Dangers of the Use of Tavel's Soda and Salt Solution for Sub-cutaneous Injection. DR. BAISCH (*Deutsche med. Woch.*, Aug. 28, Sept. 5, 1902)

reports six cases in which gangrene of the skin and sub-cutaneous tissues followed the sub-cutaneous injection of this solution after gynecological operations. Death in one case occurred from secondary infection and thrombosis.

Baisch proves to his own satisfaction, by experiments upon animals, that the bad results are due to sodium carbonate in the solution. Intravenous or intra-peritoneal use of the solution is comparatively harmless. He concludes that physiological salt solution is not to be displaced by Tavel's solution, though it has not the bactericidal property that is claimed for the latter.

E. WORMSER (*Deutsche med. Woch.*, Oct. 9, 1902) reports a case from the Gynecological Clinic of Basle in which extensive gangrene of the soft tissues of the thigh followed the injection of physiological salt solution under strict surgical asepsis. He has seen only one case in about one hundred where Tavel's solution caused this disturbance, and thinks that gangrene may be due in both cases to trophic disturbance arising from injury to the nerve of the part by the injection. (W. T.)

Obstetrics and the General Practitioner. M. H. FUSSELL (*Journal of the American Medical Association*, Dec. 27, 1902) writes an able and extremely practical article under the above caption. He admits at the outset that he has nothing new to suggest, but the article is replete with suggestions, which, if they were carried out, would doubtless save many lives. The importance of surgical technic and its practicability in the management of every case, as well as a watchful care during pregnancy, are strongly urged. Repeated urinary examinations, regulation of the daily life during pregnancy, attention to the breasts, abdominal examination, pelvic measurements, and instructions to the woman as to preparation for the lying-in period, are all important.

In too many cases the first notice which the physician receives is after labor has begun, too late for the practice of anything but cleanly measures for the relief of a suffering patient. Particular emphasis is given to the constantly neglected urinary examinations, which should always be made whenever possible.

Specific directions are given as to the management of the case during labor. Cleanliness is particularly urged with reference not only to the physician himself, his instruments and clothes, but as to the basins, towels, water, bed, in fact, everything with which the patient comes in contact. "If Godliness is ever second to any attribute, certainly it is second to cleanliness in the management of a labor case. The one thing that we want to remember always is, that we must be absolutely clean, surgically clean, and we will have relatively little trouble with what are erroneously called malaria, milk fever and various other names which are only misnomers for sepsis."

(Rather strange it appears to us that, with all the careful surgical technic, he operates through hairy pudenda, saying nothing of the use of a razor which can usually be found in any house, and the use of which is far more important than a pair of duck trousers for the accoucheur. No finger, however carefully cleansed, can be considered aseptic which has swept over a

hairy vulva even when the parts have been "washed with boiled water." If shaving is important before an ordinary operation, it is many times more so here, where daily and hourly the dressings must be changed, and a clean surface becomes a sine qua non.) (E. W. K.)

NERVOUS AND MENTAL DISEASES.

Wm. F. Becker, M.D., Wm. F. Wegge, M.D.

Raynaud's Disease.—Another instance of a surgical measure applied to nervous disease—the first of its kind—is reported from Dr. Osler's clinic by Dr. Harvey Cushing, ("Treatment by the Tourniquet to Counteract the Vaso Motor Spasm of Raynaud's Disease," *Jour. Nerv. and Ment. Dis.*, Nov., 1902.) The patient was a neurotic woman of 35, had suffered from attacks of "chilblains" since childhood during which "toes or fingers would become red and swollen and would itch and burn." Shortly after a recent attack of la grippe the legs, feet, arms and hands became red and swollen. After ten days extreme burning pain developed in these parts characteristic of cases of "local asphyxia." This was aggravated by the standing position and recumbency became necessary, also morphine almost daily for the pain and to induce sleep. On several occasions after a particularly severe exacerbation a small dry brown eschar had formed on the pads of one or more of the toes or fingers. Osler's note on the condition was as follows: "Hands slightly congested, cold and moist; slow return of vascularity after compression; terminal phalanges blue; pads of fingers show dessicating epithelium and scars of old sloughs; on outer side of arms are scars where the skin has been involved in the last attack; neither radial nor brachial artery palpable; pulse small and feeble; general lividity of toes and feet; toes like the fingers only more advanced; considerable dessication of the skin, marked blueness of tips of toes and scars of old healed gangrenous sloughs; feet painful and tender to manipulation; tip of nose dark colored, deeply congested, but not swollen."

During an exacerbation of the pain and asphyxia chiefly in the upper extremity, the flat rubber bandage was first employed as a tourniquet about the upper arm. The application caused much pain and discomfort. On removing it after one or two minutes' application, a bright flush of the extremity followed with increased surface temperature and a much more readily palpable radial artery. This vaso motor relaxation lasted but a short time but gave the patient much relief and she began to improve thenceforth, the tourniquet being applied daily, the application being endured finally to five minutes or more without the early discomfort and pain. The relief to the burning pain in the fingers was so pronounced that the patient would call for the tourniquet. Improvement in the circulatory condition was noticed from the first. Soon no more morphine was required either for sleep or pain and the attacks became less frequent and severe.

After two or three weeks the patient was able to get up and move about her room without discomfort. Exposure to cold, as from driving in the open air, brought no further trouble. She was discharged recovered and during

a long observation afterward, including the winter months when there had usually been some recurrence of the condition, there was no return.

The apparent success of this treatment depends seemingly upon the physiological "blocking" effect of the elastic constriction on the peripheral vaso motor nerves. "This temporary interruption of function" says the author. "allows the terminal arterioles to completely relax and a state of arterial hyperæmia to take the place of the local asphyxia which has resulted from the pre-existing spasm." If this is employed early or often repeated, the hyperexcitability of the vaso motor center subsides or, what is more probable, the local vascular conditions become so altered by the periods of active circulation that slight peripheral stimuli no longer provoke the intense reflex constrictor responses. (W. F. B.)

Babinski's Sign during Sleep and Chloroform Narcosis.— BICKEL (*Deutsche Zeitschr. f. Nervenheilkunde,* Band 22, Heft 1 & 2) has studied Babinski's sign in healthy sleeping individuals, and in individuals undergoing chloroform narcosis.

He found the sign present in quite a large number of individuals during deep sleep in whom it could not be elicited while they were awake. The primary dorsal flexion of the great toe, however, was found to be very energetic, instead of being slow as is the case in individuals suffering from organic disease of the nervous system. A similar condition existed at certain stages of chloroform narcosis, but the reflex disappeared as narcosis progressed and in many persons reappeared at the time of awakening therefrom.

He concludes that in many cases a functional inactivity of the cortex, or of the corticofugal tracts alone, is sufficient to produce Babinski's sign, without disputing its pathognomonic importance, (with certain restrictions). (W. F. B.)

The Relationship of Family Myoclonia to Myotonia Congenita. LUNDBORG (*Deutsche Zeitschr. für Nervenheilkunde,* Vol. 22, p. 153) discusses the points of similarity existing between family myoclonia and myotonia congenita, which he enumerates as follows:

Both diseases are essentially chronic and are probably due to auto-intoxication. The former begins in childhood, while the latter is congenital or begins during early childhood. The former usually attacks members of the same family and not infrequently several families of the same generation. The latter usually attacks a number of the same generation, and often several members of a family.

Psycho-tonic reaction, followed in time by psycho-clonic reaction in the former, and psycho-tonic reaction in the latter.

Marked psychic disturbances develop in the course of time in the former and terminate in distinct dementia, while in the latter mild psychic disturbances develop in time and in some cases a species of feeble-mindedness occurs.

In the former the striated muscles are attacked by spasms, which at first are tonic and later are clonic in character, varying in degree of intensity in different muscles and rarely involving the muscles of the eyes.

The same is true of the latter with the exception, that the spasms are always of a tonic nature.

Further points of similarity are the favorable effect of moderate doses of alcohol, and of fever; and the contrary effect of cold and of exhaustion. Mechanical irritation of the muscles induces spasms in both diseases.

He refers to papers by Erb, Jolly, v. Bechterew and others, and to the experiments of Sidney Ringer and Saintsbury in support of his view of the toxic nature of both diseases. He reasons further that it is probable that the toxic substance producing myoclonic spasms affects the nervous structure more particularly, while the tonic spasms are due to a direct toxic effect upon the muscles.

v. Bechterew's conclusions, to the effect that myotonia is due to a peculiar disturbance of metabolism by which toxic products which poison the muscular structures are liberated, and produce the so-called myotonic change of muscular action, are quoted.

A further suggestion contained in this very instructive paper is that the designation family myoclonia be changed to dementia myoclonica (familiaris.).

(W. F. W.)

A Case of Severed Spinal Cord in which Myelorrhaphy was followed by Partial Return of Function. Perhaps the most startling thing in neurosurgery is the reported case of suturing of the divided ends of the spinal cord in a complete transverse lesion, presenting the usual desperate symptoms. The case is reported by F. T. STEWART (*Phil. Med. Jour.*, June 7, 1902.)

The patient, a woman of 26, was shot in the dorsal spine; the operation was done three hours after and the bullet was removed (32 cal.). The distance between the severed ends of the cord was ¾ of an inch as verified by Dr. Mitchell and others present. The wound was flushed with a salt solution and the ends of the cord approximated with three chromicised catgut sutures passed by means of a small staphylorrhaphy needle, one suture antero-posteriorly through the entire thickness of the cord, the other two being passed transversely. There were difficulties because of the narrow space in which the suturing had to be done, and because of the consistency of the cord and the wide interval between the fragments, the catgut frequently tearing out before the ends were finally approximated. The dura was not brought together.

On the fifth day the patient felt a squeeze of the leg, on the forty-second a pin point on the upper thigh, on the sixtieth day she could move the toe easily. The improvement was very slow after this, but finally went so far that after sixteen months all motion had returned, the weight of the body could be supported on the legs when the patient took hold of the back of a chair, and the touch, temperature, and pain sense returned all over.

[While the return of some sensation by the fifth day precludes the possibility of regeneration of the particular divided nerve tract and leaves open the possibility that the cord was not entirely severed in its whole transverse extent, as supposed by the author, the operation is very encouraging.]

(W. F. B.)

Organic Disease of the Brain following Traumata. STADELMANN (*Berliner klin. Wochenschrift*, No. 50, 1902 and No. 1, 1903) reports three cases of

late development of organic disease of the brain following traumata of the skull. In the first case the head was struck by a stone. Severe psychic disturbances, maniacal attacks and suicidal tendencies developed several weeks after the reception of the injury. Life was terminated by suicide.

Case number two made a good recovery from an injury to the head, but a short time later, severe headaches and loss of consciousness developed suddenly, followed by typical Jacksonian epilepsy. The autopsy revealed extensive softening and deep hemorrhages into the motor area and frontal lobe.

In the third case a cerebro-spinal meningitis (proven by autopsy) developed seven weeks after the reception of the injury.

During the discussion of the paper, additional cases were reported by Fuerbringer, Bloch, Benda, Davidsohn, Kron, Bernhardt and Remak, thus demonstrating the relative frequency with which late development of organic disease of the brain after such injuries is met with. (W. F. W.)

Chorea Electrica. LUDWIG BRUNS (*Berliner klin. Wochenschrift*, No. 51, 1902) discusses the subject of chorea electrica in a very interesting paper.

He divides chorea electrica into three groups, according to their pathogenesis.

In the first group he places the cases of chorea electrica in a strict sense, as described by Henoch; these cases are, as a whole, unfavorable subjects for treatment. His second group comprises the hysterical variety. In this group he places the cases described by Bergeron, all of which recovered rapidly under treatment. In the third group he places those cases of chorea electrica that are of an epileptic nature.

He maintains that this division is of great importance from both a practical and a therapeutic standpoint. He thinks it unwise at the present time to drop the designation chorea electrica, as suggested by some authorities.

(W. F. W.)

DISEASES OF EYE, EAR, NOSE, THROAT.

C. Zimmermann, M.D., G. E. Seaman, M.D., H. B. Hitz, M.D., N. M. Black, M.D.

On Syphilis of the Orbit. Little being found on this subject in the textbooks, PROF. GOLDZIEHER, Budapest, (*Collection of Ophthalmol. Essays by Prof. Vossius*, Vol. 4, No. 8, *Samml. zwangl. Abhandl. a. d. Gebiete d. Augenheilk.*, 1902) took it up for a brief, but complete discussion. From his own observations, and clinical histories published by others, he gives the following résumé. In every case of rapidly growing exophthalmus the orbital margins must be searched for signs of periostitis. Even if anamnestic data are lacking, the former points to syphilis, when accompanied by thickening of the upper orbital margins. In the absence of periostitis, pain—spontaneous or elicited by pressure on the bones, is in favor of syphilis, especially nocturnal periorbital pain. The diagnosis gains in certainty if associated

with periostitis of other cranial bones. These rules have special value in symmetrical, rapidly growing tumors of the orbit, and, if not contraindicated, always justify antisyphilitic treatment. (C. Z.)

A Casuistic Contribution to the Etiology of Concrements in the Lachrymal Canaliculi. SEGELKEN, STENDAL, (*ibidem*, p. 134) reports the case of a man, aged 25, who, while throwing down hay in his barn, was struck by a stalk in his right eye, which settled under the upper lid and remained there for 14 days. After removal slight improvement for three weeks. Then the eye again became red, and showed lachrymation, purulent secretion, and swelling of the upper lid. An obstruction of the lachrymal duct was diagnosed but treatment with probes, continued for a year, had no effect. When he came to S. there was a dark-red, somewhat hard, pea-sized swelling in the region of the upper canaliculus, not painful on pressure. The upper punctum was wider than the lower, but no pathological fluid could be expressed. Caruncle, semi-lunar fold and conjunctiva were very much inflamed, the latter was granulated and showed marked papillary hypertrophy as in trachoma.

The upper canaliculus was slit open and two hard, dark brownish globular concrements, 3 to 4 m.m. in diameter, were evacuated. After two weeks the patient was well.

The microscopic examination of the concrements revealed dense mycelia which had some similiarity to actinomyces, but proved to be leptothrix. The author thinks it most likely that the latter was introduced into the eye by the piece of hay, on which leptothrix grows. S. opposes the assertion of von Schroeder, that all cases, so far recorded in which moulds have been found in the lachrymal canaliculi had to be considered as actinomycosis and advocates further cultural investigations. (C. Z.)

Treatment of Corneal Infiltration by Iodin-Vasogen. ALEXANDER DUANE (*Archives of Ophthalmology*, Sept., 1902) gives his experience with iodin-vasogen in the treatment of nineteen cases of corneal infiltration. A number of cases are detailed, and the results, according to Duane, were exceedingly favorable. In acute cases the applications were at first made almost every other day, and later at longer intervals. The remedy was applied on cotton-tipped probes after first mopping up the tears. No untoward local effects of any consequence were observed, although there was at times marked ciliary injection, and in several cases considerable pain. It was not found necessary to use cocaine previous to the application.

The author concludes that "iodin-vasogen is a valuable application in infiltrated and spreading ulcers of the cornea, whether associated with conjunctival secretion or not. It is particularly indicated in those cases in which the galvano-cautery is contraindicated by the situation of the infiltrate." (G. E. S.)

Cataract Following Shock from Live Wire. J. W. STIRLING (*Montreal Med. Journal*, Feb., 1903) reports the case of a boy, aged 13 who was struck

over the left malar region by a live wire. He was unconscious for an hour and artificial respiration was resorted to. At the time of injury vision was normal but gradually failed so that in a few months it was practically lost. There is a large scar at the site of the burn over the malar prominence. A pale, bluish-white cataract is present; no other abnormal condition. Vision equals perception of light, but projection of light is uncertain in the lower part of the field, probably due to retinal or choroidal exudation.

(G. E. S.)

On the Use of Large Doses of Salicylate of Sodium and an Attempt to explain its Action. H. GIFFORD (*Ophth. Record*, Dec., 1902) thinks that although the sodium salicylate is commonly used in rheumatic and some other inflammations of the eye, there are certain classes of cases in which its advantages are not sufficiently appreciated, and that the dose usually given is too small to accomplish the best results.

He has found that the average patient will stand during the wāking hours (7 A. M. to 10 P. M.) one grain to each pound of weight. Suggestions as to the best method of administering the drug are given.

The writer has tried aspirin with about the same unpleasant symptoms as from salicylates when enough to produce good results was exhibited.

In all non-specific inflammations of the iris, ciliary body, sclera and episcleral tissue, whether of rheumatic origin or not,, the writer believes salicylate of sodium is the most important drug; it is of great value in acute retrobulbar affections of the optic nerve; also in acute glaucoma, as recommended by Sutphen. In those cases classed as optic neuritis, there are many conditions not really inflammatory, but due to stasis or thrombosis; in these, as also in posterior chorio-retinitis, more faith is placed in large doses of the iodides than in the salicylates. Special stress is laid upon the use of the salicylate in sympathetic ophthalmia, post-operative or traumatic inflammations of the iris and ciliary body, interstitial keratitis and herpes cornea.

In sympathetic ophthalmia G. thinks it superior to mercurial inunctions, but frequently uses the two alternately. Emphasis is laid upon the necessity of keeping up the use of salicylates one or two days a week for a long time after the last sign of acute inflammation has disappeared.

In cases of interstitial keratitis plainly the result of hereditary syphilis, the action of the salicylate is much less potent and certain than in those showing no such marked signs, but frequently does more good than both iodides and mercury. Those cases of iritis which not infrequently occur after cataract extraction, respond most promptly to a generous use of the drug.

In herpes corneae the use of the salicylate in connection with local applications of iodine gives relief where hot applications and atropine fail.

In explaining the drug's action, G. argues that its rapid elimination from the body by the kidneys is against its being considered a germicide or germ hindering substance, as a 1-1000 to 1-500 solution is necessary to decidedly check the growth of ordinary white and yellow pus cocci. The theory of Oltramare is most plausible, according to which "a local depletion is produced by the general capillary dilatation which the salicylate causes."

Reference is made to the remarkably favorable influence which an optico-ciliary neurectomy, in which a large part of the blood supply to the eye is cut off, exerts upon traumatic inflammations, and to the action of cardiac depressants in checking colds. The diaphoresis produced is considered a secondary factor in the good effect of the drug. (N. M. B.)

Post-Diphtheritic Ocular Paralysis—P. N. K. SWENK (*Med. News*, Feb. 14, 1903) in discussing post-diphtheritic ocular paralysis, says that the paralysis is an essential part of the disease not due to the disease itself, but to the presence in the system of certain resulting toxins.

The sphincter irides are seldom or never involved. The ciliary muscles are more frequently involved than any other portion of the muscular system, with the exception of the velum palati.

Diphtheritic paralysis is generally bilateral, though cases of unilateral paralysis have been observed. Recovery from post-diphtheritic paralysis of accommodation is more rapid in the young than in older subjects. Diplopia is observed when one or more of the external ocular muscles are involved; the external rectus being the one most frequently affected, except where both internal recti muscles are affected. The involvment of the external ocular muscles is of short duration.

Ocular paralysis seems to bear no relation to the severity of the attack of diphtheria. (G. E. S.)

Avulsion of the Eyeball by Midwifery Forceps—SIMEON SNELL (*Ophth. Review*, Jan., 1903) reports the case of a baby, one day old, which was brought to the Royal Infirmary, Sheffield, with the left eyeball hanging out on the cheek and connected with the orbital tissue by bands of conjunctival tissue. There was a mark of forceps over the left eyebrow and facial paralysis involving the lower half of the right side of the face.

The optic nerve had been torn through, leaving about one inch attached to the eyeball. The eye was freed from the tissue which held it, and removed. The birth had been difficult and prolonged, and required considerable traction with the forceps. (G. E. S.)

Thrombosis of the Sigmoid Sinus. E. GREUNING (*Laryngoscope*, Jan., 1903) reports three cases in which operation was performed, with two recoveries and one death. The first case, in a child of three, is remarkable on account of the extensive operation necessary. After having definitely determined the condition by an opening into the sigmoid sinus through the mastoid, the jugular was followed to just above the clavicle, where it was found distended and dark. It was doubly ligated, dissected out to the base of the brain, and removed. Perfect recovery. (H. B. H.)

Electrolysis in Eustachian Tube. NORVAL H. PIERCE (*Laryngoscope*, Jan., 1903) contributes an interesting and instructive paper. Attention is called to the possibility of accident, such as the breaking of an electrode or the puncture of the carotid. His conclusions are:

1. In otosclerotic disease, electrolysis is useless.

2. In the great majority of cases of catarrhal disease it has no advantage over other methods of treatment.

3. In a certain few cases where there is probably a soft exudate near the isthmus, it may be regarded as of some value. (H. B. H.)

Cholesteatoma. DUNDAS GRANT of London (*Journal of Laryngology, Rhinology and Otology*, Oct., 1902) inclines to the view that the formation of large cavities in the mastoid from cholesteatmatous masses is due more to pressure absorption than to ulcerative process in the bony walls. He looks upon cholesteatoma as a "desquamative dermatitis," the accumulated mass being the residue left by an effort on the part of nature to re-line a cavity that has been entirely denuded of epithelium by some past suppurative process. (H. B. H.)

The Results of Crede's Method. In 1917 new-born, treated according to Credé's method at the gynecological clinic at Goettingen by E. RUNGE (*Berl. klin. Woch.*, 1902, No. 20) not one primary infection occurred, and only three cases of secondary infection in the second week, which could not be charged to the method. Since, from 1897 on, 1 per cent. solutions of nitrate of silver are employed, irritations of the conjunctiva occur less frequently. It is essential that Credé's prescriptions be strictly adhered to, i. e., that the instillations be done as early as possible, one hour after delivery at the latest. (C. Z.)

Protargol in Blennorrhoea Neonatorum. M. LEWITT, Berlin, (*Deutsche med. Wochcnschr.*, 1902, No. 29) writes a collective abstract of the literature on protargol, with the résumé: 20 per cent. solutions of protargol have, as prophylactics against blennorrhoea, certain advantages over nitrate of silver since they have the same therapeutic effect and are less irritating. (C. Z.)

DERMATOLOGY.

Louis Frank, M.D.

Prophylaxis and Treatment of Infantile Eczema—A. SCHWAB (*Presse Méd.*, No. 41, 1902) mentions four etiological factors: parasites, dentition, neuro-arthritic hereditary tendency, and disturbances of digestion and nutrition. The latter factor is to-day considered the most important, while heredity is considered a disposition. The cutaneous lesion depends on an auto-infection, a typical example being the eczema of overfed infants. Treatment must therefore be prophylactic and curative. The nursing mother must refrain from over-eating, the diet must be a mixed one with meat in moderation, alcoholics and coffee must be avoided. The infant is to be nursed not oftener than every 2½ hours, and twice at night; from the third month every

three hours. At the appearance of incompletely digested stools or vomiting the quantity of milk is to be lessened. Arsenic and other internal remedies are prohibited excepting some antacid, as soda bicarbonate or magnesia. Locally, inert powders are applicable. Water baths and moist applicatibns are to be carefully and sparingly used. The crusts are softened and removed by indifferent oils, and zinc ointment or cold cream applied in conjunction with 3 per cent. salicylic acid. Only in exceptional cases are sulphur or tar indicated.

Psoriasis following Vaccination—E. WEINSTEIN (*Wiener med. Wochenschr.*, No. 4, 1902) observed the development of typical psoriasis efflorescences on the seat of vaccination in the case of a 22 year old soldier. These remained localized for one month when other localities were affected. The author cites 24 cases in which psoriasis developed sooner or later after vaccination, mostly in patients without hereditary history.

The Indications of Phototherapy in the Treatment of Lupus and Defined Dermatoses of the Face—LEREDDE of Paris (*Presse Méd.*, No. 72, 1902) gives a general review of the action and technic of the Finsen treatment, and is of the opinion that lupus resisting the treatment of scarification or galvano-cautery should not be considered incurable before the "light" treatment has been applied. Repeated cauterizations produce an infiltrated, hard tissue which is liable to resist the action of the rays, and the curative action is necessarily slow. In lupus erythematosus, the light treatment is successful after all other means have been applied. A beneficial action can also be observed in acne rosacea, rhinophyma, epithelioma and sycosis.

On the Treatment of Erysipelas in the "Red Room"—H. KRUGENBERG (*Muench. med. Wochenschr.*, No. 13, 1902) reports eighteen cases of erysipelas that had been treated in the above manner with unusually good results. In seven cases the fever lasted less than one day, in eight cases between 1 and 2½ days, in one case 6 and 7 days respectively. The course of the disease was a mild one, with the exception of one case of 6 days' duration which was followed by great depression and alopecia. The boundaries of the erysipelas—while at first sharply defined—were distinguished with difficulty after twelve hours. Slight hyperemia and scaling were noticeable for a few days. Of the 18 cases mentioned 4 relapses occurred. There being no curative power in the red light, the beneficial action is due to the exclusion of the harmful irritation of the chemical rays; these rays probably increase the pathogenic activity of the generators of erysipelas.

The Family Laxative

It is well known to physicians that "Syrup of Figs" is a *simple*, *safe* and *reliable* laxative, which does not irritate, or debilitate, the organs on which it acts, and being pleasant to the taste, it is especially adapted to ladies and children, although generally applicable in all cases. Special investigation of the profession invited.

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A CASE OF LEPROSY.

By J. H. MUSSER, M.D.,
PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

The following case is interesting as a warning, in view of our national development. The circumstances surrounding it threw me off the track, and I am sure misled the gentlemen who had the patient in charge for a year or more subsequent to my observations. (The following notes were taken early in 1901.)

The patient was a school girl, aged 15, a pupil in a large boarding-school in Philadelphia. She was a Cuban, and had been in the school from September of 1900 until her removal in April of the following year.

The family history was good, save that the mother was highly neurotic.

The patient was well and strong until two years ago, that is, in 1898. At that time, when 13 years of age, she had what appears to have been an erythema—a diffused eruption of painful red nodules on the skin. They disappeared, and no return was noted until recently, the patient in the meantime remaining perfectly well.

She was taken ill about the twenty-second of December. She had slight tonsillitis, pharyngitis and headache, with aching in her limbs. The symptoms did not abate, and about the middle of January I was asked to see her.

The pale, delicate looking Miss was suffering from pain in her throat, her knees, and tibia. The pharyngitis was active, the tonsils enlarged. Cultures showed a streptococcus infection. In a few days an eruption of painful red spots appeared about and below

the knees. At the end of a week the knees and elbows were swollen, painful, and tender. The pain was extreme at night. The arthritic swelling lasted about two weeks. The eruption lasted until the fourth of February. It consisted of irregularly distributed raised nodules ½ c.m. in diameter, surrounded by a reddened area. They were the seat of great pain and exquisite tenderness, and they appeared and disappeared, leaving brownish stains. About the end of January a tender, painful swelling appeared on the dorsum of the right hand, in the sheath of the tendon of the middle finger. It was the size of a large pea, and very firm. It disappeared in about two weeks.

The patient improved slowly, and by the tenth of February all signs of eruption, save pigmentation, had disappeared. There was still some pain in the joints on motion.

During part of this time, that is in January, there was fever. It was irregular, rising to 101°-102° at night. There was a slight systolic murmur at the apex, which was in the fourth interspace, 7 c.m. from the median line. The murmur was also heard at the base. The praecordia was slightly tender. Leucocytes increased to 12,000. Hemoglobin 70 per cent.

2-18-1900. Improving. Areas of anesthesia on ulnar side of right arm. Murmur unchanged, color better.

3-16-1900. Improving. Heart murmurs about the same, the one at base well marked, lessening in erect posture. No thrill. No enlargements. Anesthetic areas on left elbow inner side.

3-27-1900. Pain in muscles of breast.

4-16-1900. Since yesterday, soreness in legs. The skin and superficial tissues of right calf are thickened and nodular, slightly reddened and painful to the touch. Similar condition over left leg. No abnormal temperature over tender areas. Patient otherwise feels well.

4-23-1900. By this day, tenderness, pain and inflammation disappeared.

4-24-1900. Seems perfectly well. Increased weight and strength. Goes about in social duties. Appetite and digestion good. From a bed-ridden girl has grown strong. Throughout her illness she was highly emotional and presented many hysteric manifestations. Menses had been absent two months. At this date the most important complaint was of an area of anesthesia below the knees.

She left the school in April, and in May returned to Cuba. I placed her under the care of the best physicians in Havana. She continued ill the following summer and winter, suffering from obscure

but chiefly rheumatic and skin manifestations. Early in 1902 her physician wrote to me to that effect, and told me he would send me the notes of her case. He stated that her long illness made him suspicious, and in the spring of 1901 he asked one of the recognized authorities on leprosy, resident in Havana, to see her. He at once pronounced the case one of that disease. The subsequent course of the disease proved his views were correct.

During the time the patient was under my observation I thought it was a case of arthritis and erythema nodosum of rheumatic origin, the same process giving rise to the faucial inflammation. The areas of anesthesia I considered to be of hysterical origin, particularly as the picture of hysteria otherwise seemed complete.

THE PSYCHOSES OF TYPHOID FEVER, WITH A REPORT OF THREE CASES.*

By ARTHUR W. ROGERS, M.D., Wauwatosa, Wis.

In taking up the discussion of the psychoses of typhoid fever, time and space prohibit my entering into detail and consequently I desire to place before you at this time, as briefly as possible, a few points of interest concerning these psychoses and to illustrate with three cases recently coming under my observation.

It has long been a well recognized fact that of all febrile diseases, typhoid fever is most commonly accompanied by delirium, and likewise observations covering the past 25 years show that this form of fever more frequently than any other is responsible for disturbances of the mental equilibrium. It is to be noted that the second and third attack of typhoid fever is more prone to produce mental disturbances than the first.

Age and sex are of but little moment as predisposing causes of this psychosis, but vicious habits leading to states of malnutrition and exhaustion play an important rôle. Constitutional instability, however, will be found to be responsible for the greater number of these cases,—the severest and most protracted having been seen in the neurotic class, and careful inquiry will almost invariably develop the fact of alienation in some other member of the family.

* Read before the Milwaukee Medical Society, February 10, 1903.

Too great emphasis cannot be laid upon this point in the etiology of this type of mental disturbance. That a predisposing neuropathic or psychopathic element enters greatly into these cases is evidenced by the fact, that many apparently robust and otherwise healthy individuals develop pronounced mental symptoms in spite of the fact that the typhoid infection is of a mild order; while, on the other hand, many of the most severe cases, continuing over a period of weeks and accompanied by protfacted delirium, do not give rise to any distinct symptoms of insanity.

Regarding the typhoidal symptoms of these cases I would call your attention to their pronounced irregularity and freedom from all that is classical. Temperature and pulse are far from typical and the degree of temperature has no apparent influence upon the severity of the psychosis. Roseola may or may not be present,while the appearance of the tongue is usually that characteristic of the infection. The diazo and Widal reaction are often found.

The type of psychosis will usually fall under one of three heads: pseudo-dementia, mania, or melancholia. The most widely adopted grouping, however, is that suggested in 1881 by Kraepelin, *viz.*, initial delirium, febrile psychoses, and asthenic psychoses.

Initial delirium includes the "prefebrile and prodromal deliria of the fever; they make up a group which represents the rarest form of the typhoid psychoses and the one of the most serious outlook, suggesting as they often do, a constitutionally diminished cerebral resistance upon a basis of neuropathic inheritance."[1]

The second class, or febrile psychoses, comprise the great majority of mental cases developing in connection with typhoid fever. They may appear at any time during the febrile movement.

The third class, asthenic psychoses, appear during convalescence. This period of the disease is pre-eminently favorable for the development of a psychosis. The patient, weakened by prolonged fever or exhausted by hemorrhage, with tissues generally in a state of malnutrition, falls a ready victim to some form of mental disease.

It will be seen from the above that Kraepelin's classification has more to do with the time at which a psychosis may develop during the course of typhoid fever, while the other classifications have to do with the type of mental derangement.

In looking over the literature it becomes apparent that there is nothing characteristic of the psychoses associated with typhoid fever. In many instances, however, the symptoms appear as a profound

(1) Farrar. Amer. Journal of Insanity. Vol. 59, No. 1, p. 27.

exaggeration of the "typhoid state.". The patient presents a state of acute dementia, differing, however, from a true dementia in that the mental faculties arouse themselves more or less completely to their normal activity. Intellectual oblivion is the chief characteristic of this state. "The patients become stupid and sit or lie for hours in the same position; they are difficult to arouse even for a moment, but show no indications of veritable depression, hallucinations, or delusions. Many of them have transient periods of excitement, followed by a stupor even more profound than before."[2] In other cases a state of mania, or, more commonly still, sub-acute mania may develop. Here we find delusions and hallucinations of sight and hearing very much in evidence. There may be great motor excitement,—patient running about the room, fighting off imaginary persecutors and striking at or running away from loathsome and dangerous hallucinatory objects. The delusions do not take on a well-defined nature, but there is evidence of complete lack of consecutiveness in the patient's mental operations.

Contrasted with this last phase of mental derangement is melancholia. This is the most frequent form of insanity occurring during convalescence. It is characterized by a more or less profound depression, increasing in some cases to stupor, and confused hallucinations, especially of hearing, and by delusional ideas, principally of persecution, of being lost or of having committed the unpardonable sin. These are the cases that suddenly spring from their beds and plunge through open windows to death.

In summing up it is very noticeable that all the mental disorders occurring at any stage of the typhoidal infection are characterized by marked and persistent obscuration of the mental faculties, and if there is any one thing pathognomonic of this type of psychosis it is this mental obtusion,—whether we have a mania or a melancholia the same condition is to be seen in varying degrees.

Two of the cases which I wish to present were the result of the typhoid so prevalent in Chicago during the past summer and fall, and, by the way, this epidemic was particularly characterized by an unusually large number of such cases.

The first case was that of a man, aged 33, of English parentage, and highly neurotic temperament. He had always enjoyed good health and strength until 1892, when he was advised to go to California because of a persistent cough following an attack of pneumonia. Here he came in contact with convivial friends and was rather dissipated for two years. He had been an excessive user of

(2) Berkeley. Mental Diseases, p. 354.

cigarettes most of his life. Three attacks of delirium tremens resulted in his entering one of the Keeley Institutes last August. Since this time he had used no liquor or tobacco, but at no time was he free from hallucinations of hearing. These were always of an insulting and persecutory nature. The patient went to Chicago on a visit during the month of November. At this time he considered himself in quite good health aside from the distressing hallucinations which were apparently growing less pronounced. About twelve days later he began to appear apathetic, complaining of headache, loss of appetite, sleeplessness and a desire to be on the move constantly. He kept up and was about the city day and night for several days, later having but faint recollection of where he had been or what he had done. Finally he took to bed and soon after became delirious and on Thanksgiving night was barely prevented from jumping from a third story window. Three days later I had an opportunity to examine him. At this time, probably the end of the fourth or the beginning of the fifth week of the typhoid infection, he exhibited a typical typhoid tongue. The temperature ranged from 99° to 101°, gradually becoming normal at the end of 20 days. The pulse ran from 80 to 100 and was rather feeble. The bowels were constipated and tympanites was present. Two atypical rose-spots were seen upon the abdomen. The mental condition was one of complete confusion of ideas. Delusions and hallucinations of sight and hearing of a marked persecutory order were present. He would lie quietly in bed part of the time, but was subject to sudden and pronounced attacks of violence, when he would attempt to injure those about him and would strike his head against the bed, was much given to talking to himself and passed much time on his knees in prayer, speaking in a disconnected and almost inaudible manner. His sleep was very broken and much of the night was passed in fighting off imaginary enemies and in picking off his bed and person all sorts of horrible things which his hallucinations pictured to him. After the first three days his motor excitement practically subsided and he would remain quietly in bed with only an occasional and fleeting maniacal outbreak. His improvement was apparent from the first and at the end of four weeks the somatic symptoms had entirely cleared up, while his mental operations were quite clear and he presented a fairly normal condition aside from occasional and fleeting false hearing. In eight weeks from the time he first came under observation he was well and discharged from the Sanitarium.

An interesting feature of this case were the patient's comments upon his behavior after recovery. The inception of a delusion is always interesting. In this instance it is quite clear. A short time prior to his sickness the patient had been taking the successive degrees of masonry; he had also seen much of a friend who was an ardent spiritualist, and had attended many seances. During his delusional period this patient feared death at first, because he believed he had betrayed pass words and other secrets of masonry, and

later attempted suicide to escape those who he feared would destroy him because of his betrayal. His hallucinations of sight and hearing were nothing more than exaggerated impressions made on his already susceptible mind at the seances. In fact much of his conversation was made up of masonic and spiritualistic phrases which at the time were quite misunderstood. He constantly mistook those about him for various people seen at these spiritualistic gatherings.

The second case was that of a woman, aged 40, a widow for 15 years, of English parentage, no special heredity other than that her eleven brothers and sisters were all decidedly neurotic. The patient had experienced good health up to her present sickness, but had always been of a nervous and worrisome temperament. For fifteen years she had managed a large boarding house, doing much of the work herself, and during the past summer had in addition spent much of her time in caring for her son and a boarder, both of whom were quite ill. About September 1st she began to experience unusual fatigue, had headaches and found her work very onerous. The patient realized that she had fever, but continued at her work until she suffered an attack of unconsciousness and was placed in bed. From this time she presented a mild delirium. A few days later when she came under observation, she was very apathetic, seldom replying to questions. The tongue was typical of typhoid fever, the bowels were relaxed, sleep was broken, and anorexia complete. Temperature 102°, pulse 110. The mental symptoms were those of a quiet delirium. The patient would lie quietly in bed for the most part and when speaking showed marked confusion of ideas. She gave fictitious names to those about her and on a few occasions, when interfered with, broke forth in loud, profane and obscene remarks. This, however, would continue but a few minutes when she would relapse into her former quiet state. The temperature and pulse gradually returned to normal, and at the end of 17 days the temperature did not recur. The disappearance of the mental disturbance was coincident with the subsidence of the fever. Her convalescence was rapid and 46 days after admission she was sufficiently recovered to return home.

A considerable similarity is noticeable in these two cases. Both developed from ambulatory typhoid fever and apparently at about the same stage of the infection. In both the mental symptoms appeared abruptly and the same nature of confusion as to locality and those about them was manifest. The excitement was not continuous but appeared in a sudden and explosive manner and was of but short duration. Both were suspicious and fearful of personal harm. Both were able to relate every circumstance correctly up to the onset of the mental complication, but between this time and the disappearance of the fever most things were a blank. Finally, both patients recovered in about the same length of time.

The third case was that of a man, aged 38, of English parentage. His mother died from epileptic insanity in her 38th year, in an English hospital for the insane. The patient had always been a very hard worker and for two years past had been on a city ice-wagon daily from four o'clock in the morning to ten in the evening. He was not given to any excesses and had enjoyed average health.

On July 23rd, 1901, he developed typhoid fever, which later was complicated with pneumonia. For five weeks he was very ill and most of the time in a state of mild delirium. The somatic symptoms cleared up very satisfactorily and there remained an appreciable degree of mental confusion even after he was up and about. On the 20th of September he began to act strangely, went to a grocery store and ordered a lot of unnecessary articles. The following day he was discovered sitting on a curbstone and trimming his toe-nails. He rapidly became more confused and irritable until he manifested violence towards his family, and would break forth into violent and obscene language upon the slightest provocation. About this time he came under treatment at the Sanitarium. He was very weak and emaciated, the pulse was 90, there was no rise in temperature, and the tongue was covered with a heavy, moist, yellowish coating. Appetite and sleep were quite normal. The bowels were constipated. There was considerable mental dulness and confusion of ideas. His conversation was nonsensical and disconnected. He was suspicious of those around him and fearful of being robbed. After the first twenty-four hours this patient gave expression to nothing abnormal in his speech or behavior. His convalescence was uninterrupted and at the end of sixteen days he had gained twenty pounds in weight, and was discharged well.

Regarding the prognosis of insanity complicating typhoid fever most authorities give a generally favorable report. In those cases of initial delirium coming on in the earliest stages of the fever and gradually merging into a true psychosis the outlook is less favorable, only about 50 per cent. of recoveries being reported. When a mental disturbance develops later on during the infection and during convalescence the number of recoveries is greatly increased, being about 75 per cent.

There is another class of cases showing mental disturbance some time after convalescence has been established. These are generally cases of apathetic melancholia exhibiting delusions of persecution. The prognosis in these cases is not very favorable, numbers of them retaining their delusions over many months and eventually becoming demented. The majority of these patients have either undergone a profound intoxication or are weaklings from the beginning.

Finally it is to be noted that there is nothing distinctive in the typhoid psychoses and that the chief determining factor is susceptibility to mental disorder, plus a poor physical basis.

ECTOPIC GESTATION.*

By REGINALD H. JACKSON, M.D., Madison, Wis.

The subject of ectopic gestation is of such great interest and vital importance that no apology is necessary for presenting it.

I will not weary you by detailing the various predisposing etiologic factors. Suffice it to state that the fertilization of the ovum normally occurs in the fallopian tube. The wonder is, not that cases of ectopic gestation are so frequent, but that they are not more so. The following brief description of cases emphasizes some of the important points in the diagnosis and history.

Case I.—Mrs. N., age 36, strong, healthy woman, has six children, youngest eleven months old; no history of antecedent pelvic trouble.

Six weeks ago normal menstrual period. Two weeks ago slight menstrual flow. At that time the patient arose during the night to urinate, and while on the vessel had a sudden, sharp, agonizing pain in the right tubal region; she fainted, and was carried back to bed. During the remainder of the night she was very pale, weak, and complained of thirst and air hunger. Two days later while up and at work, she had another attack accompanied by vomiting and diarrhea. She thought she was suffering from acute intestinal trouble. These attacks were repeated almost daily during the ensuing week. She rallied less after each attack.

During the last attack, which began 36 hours before I saw her, she failed very rapidly. Her condition then was very grave; cold, clammy, anemic skin, small, rapid, soft pulse, and characteristic respiratory movements of air hunger; temperature normal. All the symptoms of profound hemorrhage were present. The abdomen was distended, not rigid, but had a peculiar, indescribable, doughy, jelly-like feel characteristic of an abdomen full of blood. Dulness in the flanks, tympany over the center of the abdomen, and slight tenderness over the right tube. An indefinite small mass was felt in this region on bimanual examination.

Immediate operation. The abdomen was found filled with blood. Specimen No. 1 removed. The patient was given salt infusion on the table. The specimen is rather a rare one as it shows the foetus in the unruptured amniotic sac, which is still partially covered with chorionic villi. The hemorrhage came from the ruptured tube, where the embryonic placenta was in the process of formation.

Case II.—Mrs. H., age 23. Had always enjoyed good health; no antecedent pelvic trouble. Has one child eleven months old, nursed until two weeks ago.

The patient menstruated last three months ago, and since then has had morning sickness. She thought she was pregnant, but felt

* Read before the Central Wisconsin Medical Society, Madison, Wis., Jan 27, 1903.

that something was wrong, and had indefinite queer feelings in the region of the right tube. Five days ago, while sweeping, she had a sudden, sharp, severe pain in the right tubal region accompanied by marked faintness. She was carried to her bed, and thought she was going to miscarry. Next day she was much improved, but on examination, the attending physician, Dr. Bertrand, found a mass in the right tubal region, and sent her to the hospital with a diagnosis of probable extra-uterine pregnancy.

At operation there was found an interstitial tubal pregnancy which had ruptured into the layers of the broad ligament, thus limiting the amount of hemorrhage.

Case III.—Mrs. S., age 24. Previous health good. No antecedent pelvic trouble. She has two children, the youngest two years old.

Two months ago the patient had a very painful menstrual flow accompanied by marked prostration. A complete cast of the interior of the uterus was passed. She was thought to have membranous dysmenorrhea. Since then she has had an attack of more or less severe pain every few days in the region of the left tube, followed by faintness and collapse. One month ago a very slight menstrual flow occurred. During the past month the attacks have increased in frequency and severity, the patient becoming very weak and anemic. The abdomen was greatly distended at times. When first seen the patient had rallied from an attack two days previously, was very anemic and had a slight icteric hue. The pulse rapid, small, soft. Temperature normal. Abdomen distended, dull in the flanks and tympanitic over the center, some rigidity over the lower half of the left rectus muscle. The remainder of the abdomen has the characteristic feel of an abdomen full of blood. There is a tender mass in the region of the left tube, confirmed by bimanual examination. Immediate operation was advised but refused. During the next two days the patient had two very severe attacks, becoming pulseless, with all the symptoms of profound hemorrhage.

On the third day operation was accepted. The abdomen was found filled with a large amount of fresh and old blood; specimen No. 3 was removed. It was necessary to infuse on the table.

Case IV.—Mrs. B., age 28. Has one child three years old. No definite history of antecedent pelvic trouble was obtained.

Three months ago the patient missed a menstrual period and thought she was pregnant. Two months ago she thought she miscarried because she passed pieces of clots and membrane. Prostration at this time was quite marked, and there was considerable pain in the pelvic region. Since then she has been suffering from repeated attacks of pelvic pain accompanied by more or less collapse, at times becoming pulseless. The patient suffered almost continuously from vomiting, and was not able to retain nutritive enemata. As there was a rounded dome-like tumor which rose out of the pelvis by successive stages until it reached above the umbilicus, she was thought to be suffering from the pernicious vomiting of pregnancy. Two days before I saw her she started with another attack. She was in an

extremely low condition, very emaciated and anemic, with the peculiar icteric hue characteristic of absorption from old blood clot. The pulse was very rapid, small, soft, and poor in quality; temperature 100°; respirations 28. The abdomen was slightly distended, somewhat rigid in the lower half, where a boggy, tender tumor rose out of the pelvis to an inch above the umbilicus. Vaginal examination revealed a bulging, boggy mass in the cul-de-sac of Douglas.

The patient was in such an extremely low condition from constant vomiting and long continued loss of blood that it was almost hopeless to attempt to do anything. An incision was made through the posterior vaginal fornix and specimen No. 4 removed with an enormous amount of blood clot, the abdominal tumor being blood confined by omental adhesions. The patient was infused on the table and twice during the next two days, but being unable to retain any nourishment, she died on the third day from exhaustion.

Case I, with vomiting, diarrhea and collapse, emphasizes the fact that many cases of so-called acute cholera morbus with rapid termination in death may in reality have been cases ow ruptured ectopic gestation.

Case III, with passage of a complete cast of the uterus, throws suspicion on membranous dysmenorrhea, every case of which should be examined thoroughly for ectopic gestation.

I have purposely avoided bringing out in these brief histories many of the commonly supposed necessary predisposing factors and classical symptoms of this condition. On perusing this subject in the average text-book, the student is impressed with the idea that it is a rare condition, a gynecological curiosity, nearly always found in old primiparae, or in women with histories of antecedent pelvic inflammation, and that in making a diagnosis we should find contributory signs of pregnancy, both in the history and in the physical condition of the breasts, vaginal mucosa, and uterus.

In an experience covering upwards of fifty cases, I regret to say that in the majority of cases the correct diagnosis had not even been thought of by the attending physician, or, if contemplated, had been renounced because of the absence of supposedly necessary symptoms and signs.

It is to be regretted that the diagnosis is not more frequently made before the rupture occurs. Once ruptured, it is lamentable and inexcusable that a woman should be allowed to pass into an exsanguinated condition before instituting the only measure which offers a ray of hope, an immediate operation. Every hour, every minute, every heart beat diminishes her chances.

It is well to remember the following facts:

1.—Ectopic gestation is of far more frequent occurrence than is generally thought.

2.—It may and does occur in women who have not missed a menstrual period.

3.—It may and does occur in women who have not had antecedent pelvic trouble.

4.—It may and does occur in women who are still nursing.

5.—It may and does occur in women who have had several normal pregnancies.

6.—It may and does occur in unmarried women, but the family physician is often misled in having known the patient since birth.

7.—It often exists without any uterine hemorrhage, and with no effort on the part of the uterus to throw off a false decidua.

8.—In many cases which rupture at the end of the first month, the only symptoms are those of abdominal pain and hemorrhage.

9.—The patient may not have the slightest idea that she is pregnant, and may even deny the possibility of it.

10.—In many cases nothing definite can be elicited on vaginal or bimanual examination.

In many acute cases the history is of little or no aid in the diagnosis, which must be made from the physical condition of the patient, irrespective of any affirmative or negative signs of pregnancy. Many of the fatal cases rupture at the end of the first month. The patient has not "skipped a period," and does not think she is pregnant; there are no changes in the breasts or elsewhere, no tumor can be felt, the ruptured tube not being larger than a peanut.

Upon what then shall we base our diagnosis? In every acute case there are invariably present to such a marked degree as to admit of no mistake the symptoms of *hemorrhage.*

In the past too many cases of death from supposed cholera morbus, ptomaine poisoning, internal hemorrhage, ingestion of various poisons with suicidal intent, etc., have proven at the autopsy to be cases of ruptured ectopic gestation.

It should be a cardinal rule:

"In every case of abdominal affection in a woman, first to think of and then eliminate, by a thorough examination, the possibility of an ectopic gestation." In this way only will we avoid regrets.

X-RAY APPARATUS AND METHODS, WITH A CONSIDERATION OF SKIASCOPY OF THE RESPIRATORY ORGANS.

By WILLIAM A. SICKELS, M.D., Milwaukee.

PART I.

The diagnostic and therapeutic value of the Röntgen radiation has from the first been of great interest to the profession, always alert to adopt the results of scientific research, to the improvement of recognized methods of practice.

Probably no one subject since the introduction of serum therapy has received the benefit of the concentration of thought and energy of so many individual workers everywhere.

This is at once strikingly manifested when we consider the great improvement in apparatus and technique, since Röntgen made his first announcement to the world.

At the present time the only known way of producing the x-ray is by passing an electrical current of very high potential or voltage through a highly exhausted glass tube. Our two chief sources for such a current are the Ruhmkorff coil, with its modifications and attachments, and the static machine. When the current from either of these machines is passed through a properly exhausted tube, the rays are formed and projected from a point directly opposite the cathode or negative electrode and proceed in straight lines in every direction from the point of contact. This point may be the glass of the tube itself, but in all practical forms it is a special bombardment surface, or target, within the tube. The rays are invisible and cannot be reflected or refracted, but may be diffused. The color present in the tube is due to the fluoresence of the glass, from the bombardment of the remaining molecules of air within the globe.

The x-rays being invisible require some special methods of detection. The most sensitive way of detecting them is by their power of discharging electrified bodies exposed to them. Another way is by means of the ordinary photographic dry plate. The most common method is by the fluorescence of certain chemical salts when brought into their presence; these salts are crystalline and at once light up when brought into the presence of the rays, as a diamond does in light rays. This peculiar property of the salts has been made use of for the purpose of practical observation by means of a device called the fluoroscope, which is simply a light cardboard covered with a thin layer of these crystals, and attached to a box made to prevent the daylight from reaching the eyes. Objects which are opaque

to the x-rays and which are placed between an excited Crooke's tube and the fluoroscope will prevent the rays from striking that part of the screen covered by the object; consequently fluoresence of the crystals will not occur at that spot and we therefore see in dark shadowy outlines the shape of the object.

The picture of anything obtained by means of the x-ray is not a photograph, strictly speaking, and no camera or lenses are used, as the rays cannot be condensed or refracted. However, such a picture is taken on a sensitized plate and developed in the usual manner.

If we should take an ordinary photographers' plate, place a hand upon it, expose it for a few moments to daylight, then develop and print it in the usual manner, we would have simply a picture of a black hand on a white background. The daylight does not reach the plate under the hand. Expose the same plate to an excited Crooke's tube for the same length of time, and upon finishing it we find that the rays have penetrated the skin, fat, and to a large extent the muscles and nails—leaving a faint outline of the hand. The bones have not been penetrated, and therefore show in dark relief, and we have a shadow picture of the hand—a skiagraph—the term radiograph being a hybrid union of Greek and Latin roots, and therefore objectionable.

Static machines and coils have been enormously increased in efficiency since Röntgen's discovery. The common statements and discussions, often even carried into the medical journals, regarding the efficiency or worth of one or the other of these two forms of apparatus, are as ridiculous as a discussion would be between two surgeons, as to the absolute merit of the abdominal or vaginal route, without any regard to the conditions demanding operation.

The static machines of standard make on the market at the present time are all good, and of about the same power. Increasing the plates above 24 does not increase their efficiency, for structural reasons; though some have been built with as high as 50 plates. Others having plates 6 feet in diameter and employing a one-horse power engine to run them have been constructed. This is a most efficient form of apparatus, but too expensive. The ordinary static machine without jars attached furnishes a thick bluish discharge between the electrodes when they are about 12 inches apart. Any machine which does not do this is not in good running order, and a little attention to adjustment and cleaning will soon bring the output up to normal. Much wider separation of the electrodes without breaking the discharge, is impossible, as the theoretic sparking distance is one-half the diameter of the plate, and in practice falls a little short of this.

With one of these machines and a suitable tube the bones of the extremities may be observed fluoroscopically. The outlines of the ribs, heart and movement of the diaphragm may be seen. Skiagraphs of the thinner parts of the body can be made, although long exposures are necessary, and they are of inferior quality.

Good coils of about 8 inch spark length correspond in efficiency to these machines. They are not, however, so attractive in appearance, but they cost considerably less. Between these two forms of apparatus, it is doubtful whether there is any choice for one who is providing himself with an apparatus of moderate efficiency. The decision depends entirely upon the conditions and purposes under which the buyer expects to operate it. For one who desires to do extensive or difficult work, an induction coil of large sparking capacity is a necessity. A fat heavy spark is much more desirable than a long thin one, though some results can be obtained from a spark of the latter quality.[1]

The amount of radiance proceeding from a given tube may be considered from two standpoints: First, as to quality, and second, as to quantity. The quality of the light depends upon the vacuum of the tube. An x-ray tube offers considerable resistance to the passing of the current, varying with the amount of vacuum in the tube. The ordinary manner of ascertaining the quality of the rays is to examine the hand with the fluoroscope. The blacker the shadow the lower the vacuum and the less penetrating the rays. A more accurate test is by means of an instrument called a skiameter. The quantity of the light depends upon the amount of current sent through the tube, that is, power used. The conservation of energy is as applicable to the Röntgen ray as to any other form of motion. It will serve for purposes of illustration to compare the amount of light proceeding from a certain tube and a moderate exciting power and the light produced by that tube and a powerful discharge with the light of a 16-candle power incandescent light, and the amount of illumination from a 100 or 150-candle power lamp.

Tubes are made in a great variety of shapes. The use of a third electrode has become quite general and is believed to act as a steadier of the tube. Other tubes are made with an annex enclosing some substance which may be made to give off a vapor—thus lowering the resistance of the tube. Tubes thus lowered return very quickly to a high vacuum if a powerful exciting apparatus is used. After long use the resistance of a tube becomes too high for the apparatus for which it was originally intended. It may be lowered temporarily by baking for several hours in an oven or by running the tube with the

current reversed. Good tubes may be run daily for months on a static machine. It is the heavy current which destroys tubes.

The ordinary x-ray picture or fluoroscopic image is, of course, the projection of all the shadows upon a plane surface. But stereoscopic negatives may be taken and fitted for stereoscopic observation. The perspective effect is something startling. I will in a short time be able to exhibit such an apparatus to the Society.

X-ray plates are only double-coated slow timed plates, in ordinary use by photographers. They are generally prepared for use by enclosing in two light-proof envelopes and are easily handled. Those that come already wrapped are almost invariably slightly fogged. It is preferable to keep the plates in a dark room far removed from the machine, as boxes, doors and ordinary partitions are easily penetrated and the plates destroyed.[2]

The detail as shown by the fluoroscopic image is crude and indistinct as compared with the result obtained by photographic dry-plate methods. For the thicker parts of the body dry-plate methods are absolutely necessary to get a correct view. To make a skiagraph we choose a tube which is just a little too low to make a distinct shadow of the part on the fluoroscope, and if we send current enough through the tube we will get an abundance of radiance and fine detail in the skiagraph.

For stones and calculi a tube of low vacuum and a powerful electrical discharge should be used, with a short exposure. In the thicker parts of the body where it is necessary to place the tube further away from the plate, an intensifying screen placed next to the film on the plate shortens the exposure. An intensifying screen is made the same as a fluoroscopic screen. By means of heavy currents, screens and strong tubes the length of exposure has been reduced to seconds in some instances. In exposing take great care to have tube, patient and plate perfectly still—movement may entirely obliterate the image of the desired object. The reason is that as the finished picture depends upon the fact that certain substances are opaque to the rays, the part of the plate covered by such substances will not be acted upon by the rays, and so will show the exact form of the object, after development.

For instance, you wish to make a picture to locate a foreign body in the abdomen. You place the patient on a table with a plate under him and arrange your tube in the proper position. Now, if your apparatus is one requiring a lengthy exposure, it is very likely that after the plate is developed no foreign body can be seen. The reason is that during the time of exposure, certain movements were impart-

ed to the body by coughing, straining, vomiting, etc., and when the body moved it rested over a part of the plate that had already been affected by the rays; the place over which it first rested is now open to the action of the light and will be affected like all the rest of the plate. Just a few movements equal in distance to the size of the object will entirely destroy the shadow. The same principle can be applied to stones and calculi. In this way small ones can be easily missed. Tight bandages may be used in some cases or a hypodermic of morphine may be given. It is easy to see the great advantage of short exposures.

The idea that x-ray pictures were unreliable and showed distorted views gained some credence through faulty technic, incorrect interpretation and inexperienced operators. The variations in a skiagraph are due to well understood laws. They are regular and always calculable, and are controlled by localizing apparatus, and an understanding of the principles involved.

Superficial tumors and lupus are treated with remarkable results. Lupus invariably yields to persistent treatment. The length of exposures is shorter, as is also the course of treatment, than with the Finsen light. I recall a case that was cured in nine treatments after other and severe methods had failed. It has not recurred now after five months. It is generally conceded that all large, deep-seated, or operable growths are best handled by treatment of the scar after operation.

There are some interesting points from a medico-legal aspect which have arisen with the advent of the x-radiance. For instance, obviously evil results to some party might follow if this evidence were used other than in an intelligent way.[3] Before a skiagraph is admitted in evidence, it should be shown that it was taken by a person trained in that line of work. The position of the part, the plate and the tube should be accurately determined and stated; also that parallel rays impinged upon the part examined, and that the anode was perpendicular to the part which should be shown in the same manner as the plate.[4] Several cases in different courts have shown the advantage of intrusting any person for Röntgen ray examination to a medical man. A recent decision in a court of England raises many points of practical importance to the profession, regarding the responsibility of a doctor or institution engaging a non-medical man for x-ray work. The decision in this case absolved from responsibility A (a physician) who engaged B (also a physician) to take a Röntgen ray picture for a patient, who afterward instituted suit against both physicians. An x-ray negative, like a prescription, belongs to the physician, and not to the operator.

PART II.

There seems to be a general feeling among the profession, that there is little to be gained by a routine application of the rays to a diagnosis of diseases of the respiratory organs,—a feeling which is not supported by the experience of advanced workers on this subject. For it is the truth that many different conditions in the chest may be properly diagnosticated, and sometimes mistakes due to ordinary methods of physical diagnosis may be corrected, and lives saved by an early recognition of different disease conditions.

The one great reason why these examinations of the chest have been slow in becoming popular with the majority is, that there are only a few of us who have ever had the opportunity of observing a properly illuminated chest. Nearly all of the machines purchased for x-ray work are inefficient for this purpose. In order to illuminate the chest at all, the owner of one of these machines must use a tube of such a high vacuum, that even the ribs become light colored on the screen, and a pulmonary infiltration or consolidation would be entirely penetrated and fail to cast a shadow. If a tube of a proper vacuum is used with the same apparatus, the volume of light is so small that all of the shadows are indistinct and confused. Another reason seems to be in the time and patience required by an operator to acquire a familiarity with the fluoroscopic appearance of the thorax in health and disease. For our ability to see on the screen increases with practice, just as it does to see with the microscope or the ophthalmoscope. Others are less attracted by the really difficult art of skiascopy, than by the showy, often brilliant, results of the rays in radiotherapy and in the making of "x-ray pictures." Besides, a large number are satisfied with the present methods of physical diagnosis. As a good surgeon once said to me, "this is all I need," holding up his finger. These men doubt if really very much can be seen, and are of the opinion that there is a good deal of imagination about it. They say they never could see anything, and it all depends on the personal equation anyway. These men have not had the chance yet with a suitable tube and exciter.

It is true that the practiced eye, ear and finger of the physician, when applied to physical diagnosis, enable him to open the door to a wide range of symptoms and conditions. But to apply the knowledge gained to an absolutely correct diagnosis of the case in hand, is sometimes, not to say often, difficult even to the expert.

I do not intend to more than intimate in a general way, the possibilities of this new resource, as applied to examination of the respiratory organs, in such a short paper.

From the first all writers on this subject have insisted, that it was a method to become a part of, and not to supplant the physical examination by inspection, palpation, auscultation and percussion. And it is, really, a part of it, for it is itself inspection; an extension of inspection from the external to the internal,—to the heretofore unseen. The same conditions in the chest which influence the percussion note, are also factors in the picture as seen on the screen. We have been told not to believe all we see, nevertheless, what we do see is so important, as compared with what we hear, in our communication with the sick,—that if you ever have an opportunity to examine fluoroscopically a chest of which you have just made a careful physical examination, try it. And the skiascopic image will come like a revelation. The shadow picture of a stone in the bladder gives more satisfying evidence to the mind, as to its size and form, than will any sounds, which may be elicited from it.

The term skiascopy has not come into general use. It is a word, however, that is needed for use in place of such an expression as "an x-ray examination" or "an examination by the Röntgen ray." I first heard the word proposed by Crane, several years ago. It means literally "shadow-seeing."

The literature of this medical field of the rays, as compared to that available on the surgical aspect of the subject, is very scarce. As significant of the reception of the efforts of early investigators on this line, the experience of Williams might be noted. His was one of the first and most valuable papers, and was published in a leading journal several years ago. The editor inserted after it a paragraph in brackets, the first sentence of which was—"the author is evidently an enthusiast."

An early idea in the history of the x-rays was, that the bones, being the densest tissues of the body and casting the darkest shadows, were therefore the only organs of the body within the province of the rays. And thus the field was left entirely with the surgeon. But the development of apparatus and the consequent increase in volume of radiance obtained, together with a better understanding of the qualities and properties of the rays, soon furnished the knowledge that any organ or part of the body which varied in density from the surrounding organs or parts, was a subject for examination by the fluoroscope or skiagraph. The lungs are the least dense of any part of the body and cast the lightest shadow, but this very fact brings them, next to the bony framework of the body, into the very center of the field of skiascopy, and takes from the surgeon his monopoly of the resources of the rays.

In order to secure any contrast, on the screen, between tissues of

such small density as we are dealing with in the chest, a tube, the resistance of which would be represented by an air space of three or four inches, must be used. With such a tube a small pulmonary consolidation will cast a shadow, where none would be noted if a tube of high vacuum were used, and the eye will be able to note the difference in density between inspiration and expiration. As such a tube is used on account of the quality of the rays produced, we must provide sufficient current to excite an abundance of radiance. A good "fat" spark, 12 to 14 inches in length, will produce a sufficiently brilliant flood of rays to bring out the heart and diaphragm in good contrast on the screen, and to show any change in lung density.

The patient whose thorax is about to be examined must remain a constant distance from the tube, and must be moved as the different regions are examined, the tube and screen remaining stationary. To save time and avoid overlooking any point, a regular plan should be followed. The physical examination should precede the skiascopic. Corresponding areas of the two sides should be compared, as also different parts of the same side. The lines of the diaphragm and the heart shadow should be observed. Any unusual condition, such as an aneurism or tumor, should be noticed. It is of course understood that the examiner must be perfectly familiar with the fluoroscopic appearance of the chest organs in health. The nearer any structure lies to the screen, the clearer the shadow; therefore, it makes a difference in our view whether we examine from the front or from the back. Examining from the front the shadow of the ribs is fainter—those at the back being distant and those in front soft. Hence from this position we can obtain a more unobstructed view of the organs. From the dark central shadow, due to the sternum and vertebræ, the heart extends to the left, lying in constant motion on the diaphragm which forms a shadowy arch on either side, rising and falling with every breath

When the screen is placed against the back, the ribs cast a marked shadow, so the lungs must be viewed through the interspaces. The scapulæ also interfere a little. However, the diseased area is often best viewed from this position.

Considering that the fluoroscope is in itself a miniature darkroom, it would seem that darkening the room by means of ordinary shades or blinds would be all that is necessary, but the eye is so sensitive that a very little daylight makes a great deal of difference. Therefore, in most offices these examinations are best made at night, when all light can be excluded from the room.

Some of the changes in a diseased chest are: shadows of differ-

ent density, unnaturally clear areas, changes in the heart and diaphragmatic lines, the restriction or absence of motion of the diaphragm; these must all be interpreted in connection with the clinical symptoms and the results of physical diagnosis.

The factors of an examination, as has been shown by Walsh, are then extremely simple—light, shadow and motion. Upon these rests the most extensive and careful examination by the rays.

Quackery has derived little benefit from the field of surgical skiascopy. Indeed it may be truthfully said that the x-ray has shed the light of publicity upon many an "osteopathic dislocation." I have two negatives, one a fracture of the pelvis, the other a Colles's fracture, without much deformity, made from patients who had received the bone-setting treatment for several weeks each. An "Eddyite," with a stone in the bladder might even be convinced, in this way.

But we must recognize that medical skiascopy, particularly the examination of the chest, is an inviting field for quacks. The conditions surrounding the patient examined—the darkened room and the glowing tube—the noise of the apparatus and the lightning-like sparks all tend to numb the discriminating faculties of the patient and lend force to the smooth talk of the unscrupulous.[5]

A great many people do not know that all parts and organs of the body are not subjects for such an examination. Almost everyone using the x-ray has daily experience with patients who solicit examinations of the brain, stomach, and once in a while, the appendix. Therefore, "It is the duty of the medical profession to take hold of the field of medical skiascopy as it has of the field of surgical skiascopy."

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SPECIAL ARTICLE.

THE IMMUNIZATION OF CATTLE AGAINST TUBERCULOSIS.

VON BEHRING'S SUCCESSFUL EXPERIMENTS.

By LUDWIG M. LOEB, A.B., M.D.

On March 12, 1903, von Behring delivered a lecture before the Wiener Gesellschaft für Innere Medicin, in which he gave a summary of his experiments in the Immunization of Cattle against Tuberculosis. Von Behring's work on diphtheria antitoxin is so well known and has been so epoch-making in modern medicine, that anything that he says or does must attract wide-spread attention. To one who is not well versed in the lives of men engaged in research work, v. Behring appears surprisingly young. He appears no more than forty years of age, is short, bald and round-faced, and would fail to attract attention anywhere by his personal appearance. At the beginning of his speech, v. Behring stated that it was before the same society in Vienna, that he first announced the discovery of his diphtheria antitoxin; and it is to be hoped that his present work will bear similar fruits.

His experimentation, in the present instance, has been confined to cattle, and has been only in the nature of immunization, and not at all directed to the treatment of the disease when already established. The method of procedure is the following: Very much attenuated living human tubercle bacilli are dried in a vacuum and are later injected intravenously into the animal. The drying process does not kill the bacilli, but keeps them for a number of weeks at the same grade of virulence as when first grown. The bacilli are obtained from a culture which has been in v. Behring's laboratory at Marburg for eight years. (No statement was made as to the media used for their cultivation, or as to the methods to render them less virulent.) As in the case of the diphtheria antitoxin, v. Behring had at first considered the advisability of obtaining the antibodies of tuberculosis and of immunizing animals therewith. This idea he gave up as impractical for several reasons. In the first place, many unsuccessful attempts have been made to prove the presence of antibodies in tuberculosis; secondly, antibodies are at best short lived and are excreted from the body quite rapidly—they do not kill the bacteria, but simply temporarily neutralize the toxins, rendering the individual immune for a variable time. This makes their injection suitable only for acute diseases, not for a chronic process like tuberculosis. As soon as the antibodies had disappeared from the blood, the tubercle bacilli might again become active.

The results of his inoculations into cattle were quite startling.

Those into animals already suffering from tuberculosis were bad; none were fatal. In all the other cases—400 animals were used—the symptoms in general were similar to those following the administration of Koch's tuberculin. Especially in the older animals, fever resulted as a rule, sometimes dyspnea, cough, and evidences of pulmonary edema. In some, which were killed during the reaction, edema and at times pneumonia were found; the pneumonic areas contained tubercle bacilli. All the animals, which were permitted to live, recovered from this condition after a short time. After this inoculation the animals responded positively to Koch's tuberculin test, but after some weeks the reaction failed to occur. The younger the animal, the less noticeable was the effect of the inoculation; in the very young there were absolutely no symptoms. Thomassen, of Utrecht, who followed up the work of v. Behring, injected ten times v. Behring's immunizing dose into sucklings without producing any harmful effects.

After this process of vaccination, large amounts of virulent tubercle bacilli were injected into the cattle without producing any evidences of tuberculosis. Many were treated later with tuberculin and did not react by fever. In a herd of cattle in a village near Marburg all the animals were found to be tuberculous except three calves. These were immunized by v. Behring's method, and although they remained in their unfavorable surroundings, none had acquired tuberculosis a year later. All the results of his four hundred immunizations have been of a similar nature.

Von Behring now considers his experimental work as closed, since he can do nothing more in his Marburg Institute. He is waiting to see the results of his work among cattle herds and must expect years to pass to judge of the duration for which immunity persists. He has great hopes at least of stamping out tuberculosis in cattle, which he, with most other observers, believes to be a frequent source of infection in man. He does not consider the time ripe for the adaptation of his method to the human, but thinks that ultimately the most effective procedure will be to immunize the infant. There are two ways in which this may be possible, first, by feeding the infants on the milk of immunized cows, thus transferring to them some of the antibodies; second, by injections similar to those made into cattle.

Even should the immunity not persist more than one or two years, the number of lives saved by delaying the infection beyond the most susceptible years of childhood, would be inestimable. For the present, von Behring believes that we should direct our efforts toward the extinction of bovine tuberculosis, using this method together with the separation of the tuberculous from the healthy individuals to combat tuberculosis in man.

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EDITORIAL COMMENT.

IMMUNIZATION OF CATTLE AGAINST TUBERCULOSIS.

So far as we are aware, our special report of von Behring's experiments, published in this issue of the JOURNAL, gives to the American medical world the first detailed information upon the newest phase of this, the most vital subject in medicine at the present day. Ten years ago von Behring was the magnetic figure in whom were centered the hopes of an expectant world. Von Behring's diphtheria antitoxin was as epoch-making as were Jenner's vaccine, Morton's ether, Simpson's chloroform, Lister's antisepsis, Koch's bacteriological studies, and Röntgèn's x-ray. Now all eyes are centered upon the "great white plague" as the scourge from which millions of victims cry for relief. Though Koch and others have made repeated attempts

to obtain a potent tuberculin, no decided success has crowned their efforts. Von Behring's announcement of the success of his immunizing experiments in cattle, comes to us as a ray of hope, that there may be found in the newer therapeusis, a means to combat the disease that has hitherto defied all attempts at specific or direct treatment.

MORTALITY IN MILWAUKEE.

For some reason the winter just past has been attended with an unusually high mortality in all the large cities, and Milwaukee has been no exception. Beginning with December, there has been a notable increase in the number of deaths each month over the preceding year. The climax was apparently reached in February and the first weeks of March. The total number of deaths in February was 409 and the death rate 16.88 per 1,000, a higher rate than has lately obtained.

Whatever may be the cause of the increase in other cities, in Milwaukee we can determine with considerable accuracy the cause or causes which are operative in producing the increase which is 5 per cent. per 1,000 greater than for the corresponding month of 1902.

In February, 1902, there were twenty-eight deaths from pneumonia. In February, 1903, seventy-one from the same cause. In 1902 there were seventy-two deaths under one year and seventy-nine over sixty years, while in 1903 there were 113 under one year and 115 over sixty years of age.

With the exception of grippe, the contagious diseases are greatly diminished, while grippe, tuberculosis, cancer, apoplexy, convulsions of infants, heart diseases, acute lung diseases and senile debility show marked increase. With the exception of convulsions of infants, cancer and apoplexy these diseases may, to a greater or less extent, be associated with and dependent upon grippe. That the deaths from pneumonia should be trebled is significant in that the inquiry naturally arises as to how great a rôle the lack of coal and consequent insufficient heating of houses played as a causative factor.

The deaths from pneumonia were pretty evenly distributed throughout the different wards in proportion to their respective populations; the Sixth and Sixteenth being somewhat lower, and the Fifth, Twelfth and Nineteenth being rather higher in proportion than the others; still every ward except the Sixteenth had at least one death, and the Eleventh, which had the greatest number, had but eight. Neither was any great partiality shown as to age in the acute lung diseases except in those under five years, which claimed sixty-one out of 103.

The first two weeks in March even exceeded in number of deaths any equal length of time in February and grippe, pulmonary tuberculosis and pneumonia were the most prominent causes of death.

If one might venture a rough estimate of the causes of the increase in the deaths for the winter just past, we might attribute it almost entirely to one or the other of the two causes—grippe or lack of fuel.

Cancer is a disease which shows irregular fluctuations and need not be considered as having special cause to affect the February rate.

THE ISOLATION HOSPITAL.

The Assembly Committee on Public Health and Sanitation has recommended for passage the bill authorizing the city of Milwaukee to acquire land outside of the city limits for the purposes of a new Isolation Hospital. The bill will undoubtedly pass, and perhaps some time in the dim distant future, when all the political interests are satisfied, the Health Department will succeed in carrying the project for the much-needed new Isolation Hospital to a successful conclusion. Hasten the day! A modern Municipal Hospital for contagious diseases has long been a crying necessity. It is only lack of knowledge of the situation on the part of the public that prevents them from going to the assistance of the Health Commissioner in this matter and demanding that the politicians cease their "haggling" and do their duty toward the victims of contagious diseases without reference to individual interests, but with an eye single to public good and public necessity.

THE DOCTORS' WAR ON THE "UNPROFESSIONAL."

Under the above caption, the following article appeared in the editorial columns of The Chicago Record-Herald for March 13, 1903:

Several bills have been introduced in the legislature which relate to the practice of medicine and dentistry, and one of them, the Clark act to establish a State Board of Dental Examiners, was passed by the Senate Wednesday. This measure has a special interest for newspapers and for dentists who advertise because of a section which reads as follows:

The board may refuse to issue the certificates provided for in this act to individuals who have by false or fraudulent representation obtained or sought to obtain practice in their profession, or by false or fraudulent representation of their profession have obtained or sought to obtain money or any other thing of value, or who advertise under names other than their own, or for any other unprofessional or dishonorable conduct, and the board for like causes may revoke such certificates and the certificates provided for in this act.

The fear that a selfish motive may be ascribed to it should not estop the press from combating this provision because it contains a preposterous mixture of offenses and prepares the way for serious injustice. The expression "who advertise under names other than their own" is far too comprehensive, since fraud and misrepresentation are the only things to be reached, and they may not be contemplated in the style of the business. The term "unprofessional" should be excluded from all such legislation because it erects a voluntary code of professional ethics into a prohibitory and punitive statute. All advertising is considered unprofessional by the orthodox physicians of the older schools, but certainly a competent doctor is not made incompetent by advertising, and his right to advertise should not be restricted by giving the force of law to a rule of his competitors. Neither should the young practitioners be kept down by these devices of a comfortable conservatism.

While we are on this subject a word should be said also concerning another bill which would compel the proprietors of patent medicines to add the formula of their preparations to their labels. This would not only affect advertising, but absolutely destroy property rights of unquestionable validity. It is inherently wrong and vicious, and while it is desirable that the public should be protected against quacks and impostors, it is equally desirable that the protective measures should not themselves be open to the charge of false or fraudulent representation.

What a weak-kneed policy, what a confession of selfish interest the Record-Herald displays in this editorial. Were one to estimate the annual revenue derived by the newspapers from the advertisements of these unprofessional, ignorant, criminal, advertising specialists, one would at a glance spy the reason for this "fear that a selfish motive may be ascribed,"etc. How child-like and bland is the innocence of this editorial writer who believes that fraud may not be contemplated by those "who advertise under names not their own." We may wish the unsophisticated child of nature just a mild attack of any old sickness, let it be a chronic one, too, and trust he will have the courage of his pen's convictions. If he does not emerge cured of his vagaries and do penance for sixty days, we will withdraw our opposition to the unconscionable scoundrels who advertise their non-curing cures, who hasten disease by their dishonest, dilatory practices, and who pick the pockets of their unsuspecting victims.

The Record says: "a competent physician is not made incompetent by advertising." Now, is he not? You might as well ask is a man who knows the difference between honesty and dishonesty ever guilty of a dishonest act? It is greed that makes the honest man dishonest, and it is greed that makes this competent man incompetent. He knows that to tell a patient he is suffering from a malady

in the treatment of which he may fail of success, that it is an incurable disease for which relief is sought, means to lose the patient; and he knows, too, that to promise something, so long as the wallet is fat, means the transfer of the wallet's contents to his own pocket. These offences are multiplied in various ways (Descensus Averni facile est) and this it is that makes the competent physician incompetent; this it is that stultifies the man of good medical training and makes his whole professional life a lie; this it is that makes such a man an abortionist; in short, he sells his soul for cash, each and every chance he gets.

Poverty is but a lame excuse for wilful thieving through advertisements, and is not more readily condoned than would be a girl's immoral life on the same pretext.

No, dear editor of the Record-Herald, as much as we esteem your paper, your arguments on the "Doctor's War on the Unprofessional" are rotten.

HIP JOINTS AT HOME AND ABROAD.

An editorial, which appeared in the Medical News for March 7, 1903, under the above title, seems to us to be worthy of more than passing notice, and is herewith reprinted in full.

"Some fifty years ago, when Sayre had done more than forty cases of excision of the head of the femur, he said that although there seemed a bright outlook for the operation, its period of usefulness would be short. His prophetic eye saw into the future with a clearness that was characteristic of the man. Whereas thirty years ago excision of the hip was a common operation in this city, relatively speaking, today it is equally rare.

Even in staid surgery fashions come and fashions go. In 1846, just about the time that Sayre was beginning his series, Pancoast wrote 'notwithstanding the common fatality attending the ordinary treatment of coxalgia *with caries of the head of the bone*, there seems as yet little or no reason to believe that the chances of the patient would be improved by resorting to so severe an operation—the patients in the greater number of cases dying in consequence of the extension of the caries, the violence of the consecutive inflammation, or of the exhaustion produced from excessive suppuration.' History repeats itself. In 1903 we read, Bradford and Lovett, 'The risk from death arising from general tuberculosis and tuberculous meningitis in cases of hip diseases treated conservatively, is very small: about six per cent. After operation, on the other hand, in addition to the small mortality from the direct shock of this operation there arises a death rate, according to some authors, of almost fifty per cent. from secondary tuberculous involvement. The hope of immunity from tuberculous infection has not been gained by resection.'

Apparently we have passed the mile stone; we are now sufficiently advanced, in this country to recognize coxitis in its early stages, to give it suitable protection that time may work the cure; Sayre's prophecy has been fulfilled.

So much for ourselves and our attitude toward this disease. How about the rest of the world? It is then with a feeling more akin to pity than anger that we scan the pages of a voluminous article in a recent number of the *Zeitschrift für Chirurgie,* and struggle through histories of forty-four resections! The author evidently feels that he has entered an untrodden field, and the general trend of the article is cut! cut!! cut!!! Cut the child from the hip, as though the disease were malignant; dynamite out the acetabulum, if need be; hoe out the shaft of the femur and epiphysis if necessary—it's a sort of "ad majorem Dei gloriam" job to be relished by all. This odd man admits a mortality in pus-free cases of 16.5 per cent. and 48.8 per cent. in that vast majority where it is present. How any one not the victim of fixed delusions can urge these monstrous figures on the public passes wonder! Here, however, is the explanation—read his wretched bibliography—out of a total of fifty authors cited from only ONE writes in English, and he is well known to be a rabid advocate of excision. It may be well for the German surgeon to pause before he further decimates and maims the young generation, to read what we can tell him. Despite the greatness of the empire these children *might* be useful."

Such radicalism as that which has furnished the inspiration for the above editorial is not typical of the work done by the majority of German and Austrian orthopedists; but the irritating characteristic of totally ignoring American reports of experiments or the conclusions founded upon practical experience, is only too common there.

English surgery also has been characterized by the same spirit of self-sufficiency, although the error in Great Britain has been rather on the side of conservatism.

The greatness of American surgery, which must soon become recognized, has been largely due to two factors: first, our readiness and eagerness to learn quickly any improved procedure, no matter where nor by whom it was developed; second, our attitude toward the individual patient, recognizing that our first duty is to him and that if we are unable to do him any good we must do him no harm.

INTERNATIONAL STANDARDS OF POTENT REMEDIES.

The request has come to us to give space to the consideration of a matter of real and serious importance.

How many of us realize that there is a possible and positive danger in the adoption of certain of our prescriptions by foreign countries, and, vice versa, a danger in the adoption of their prescriptions by

us? If we but consider the very generous interchange of medical journals, the widespread policy of abstracting medical articles, and the mutual adoption of therapeutic suggestions contained in these journals, the closeness—in a medical sense—of foreign countries to us must be apparent.

There are many important drugs whose use is common to all countries, but there is such a divergence in the strength of various preparations that there might be considerable danger in having a prescription calling for certain ingredients filled in any other country than the one in which it was originally written. For instance, Tincture of Aconite, a 35 per cent. tincture U.S.P., is seven times as strong as the same preparation made according to the British (5 per cent.), and three times as strong as that of the German Pharmacopœia (10 per cent.). Tincture of Belladonna is a 15 per cent. preparation U.S.P., 6 per cent. B.P., 20 per cent. French P., etc. Other examples might be cited, but these are evidence sufficient to indicate the need for some concerted action on the part of various governments.

For more than 35 years efforts have been made for the adoption of an international standard in the preparation of drugs, and these efforts have at last met with a certain measure of success at "The International Conference for the Unification of the Formulæ of Potent Medicaments," held at Brussels in 1902. Many countries were represented, and their delegates signed a protocol covering the preparations of twenty potent drugs, the intention being to incorporate them in the pharmacopœias of their respective countries. This proposition places the strength of the potent tinctures at uniformly 10 per cent.

Our own pharmacopœia is now in course of revision, and in order to insure action on the part of the committee on revision, in accordance with the recommendations of the Brussels Conference, it has been thought desirable to bring some pressure to bear upon this committee by expressions of opinion from various parts of the country.

We would suggest that local or county societies pass resolutions endorsing the action of the Brussels Conference with reference to the adoption of an international standard of potent remedies, and that a copy of these resolutions be sent to the Chairman of the Pharmacopœia Revision Committee.

NEWS ITEMS.

Milwaukee Medical Society Library.— At the annual meeting of the Milwaukee Medical Society the council was instructed to spend a sufficient sum of money for the purchase of text-books to bring the library up to date, and a committee was appointed, consisting of Drs. Seaman, Stoddard and Dearholt, to solicit contributions of books from members for a loan collection.

The library is already the largest and most complete collection of medical literature in the state, and with the contemplated additions ought to serve its purpose well.

Reorganization of State and County Societies.— Dr. J. N. McCormick, of the committee on reorganization of the American Medical Association, visited Milwaukee, March 18th and 19th, and met the committee on reorganization of the Wisconsin State Society for the purpose of conference on the proposed new constitution and by-laws of the State Society. The committee decided to recommend to the State Society the adoption of the model constitution and by-laws for state societies prepared by the American Medical Association, but slightly altered to fit the local conditions.

Dr. McCormick also spent some time in endeavoring to harmonize the differences existing in the profession in Milwaukee County, with the result that the Medical Society of Milwaukee County held a special meeting on March 20th, and instructed its secretary to confer with the secretary of the Milwaukee County Medical Society, with a view of inducing the members of that society to present their names for membership in the Medical Society of Milwaukee County.

College of Physicians of Philadelphia.— The College of Physicians of Philadelphia has succeeded in raising the $50,000 required to assure the additional gift of $50,000 promised by Mr. Andrew Carnegie. At the April meeting of this society it will be definitely decided whether a new building will be erected, or the old one remodeled.

Law Providing for Department of Vital Statistics.—The public press announces that the assembly committee on public health and sanitation favorably reported the Whitson bill creating the office of state vital statistician, and providing for a more complete registration of births and deaths. This bill is modeled after the Michigan law, and was prepared at the suggestion of the state board of health, which is to name the state vital statistician provided for by the measure. The bill provides that the clerk or registrar of each town, village, or city shall keep an accurate record of the births and deaths in his jurisdiction and report the same at frequent intervals to the state vital statistician. The latter is to receive a salary of $2,500 a year, and is to be allowed not to exceed $5,000 a year for clerk hire.

The Jewish Hospital, Milwaukee.— The Jewish Hospital Association recently incorporated under the laws of the State of Wisconsin, has leased a large, commodious building, situated at the corner of Fourth and Walnut streets, which was heretofore used by the House of Mercy and afterwards as a private sanitarium. The hospital is to be free to all (as nearly as practicable) and is to be non-sectarian, although conducted under the auspices of

the Jewish people of Milwaukee. Among the larger donations are those of A. Slimmer, Waverly, Ia., of $500, and S. M. Levy, Milwaukee, of $500. Other persons in the city and state have subscribed various sums of money. The rooms will be furnished by donations from different mercantile establishments of the city and private parties. The hospital is to go into active operation about April 15th.

Samuel D. Gross Prize.— The Philadelphia Academy of Surgery announces that the Samuel D. Gross prize will be awarded January 1st, 1905, for the best original essay on surgical pathology or surgical practice. The candidate must be an American citizen and must base the essay on original investigation.

Dr. Simon Flexner.— Dr. Simon Flexner, professor of pathology at the University of Pennsylvania, has been appointed chief director of the Rockefeller Institute of New York. This position carries with it the largest salary ever paid to any American physician. Mr. J. D. Rockefeller has endowed this institution with $3,000,000, which sum will be spent in the purchase of a site and the erection of a pathological laboratory.

Consumption in New York.—Dr. Lederle of the Board of Health of the city of New York recently reported to Mayor Low that "tuberculosis remains the greatest single cause of death in this city and one which, in my opinion, demands more attention from the municipal authorities in the interest of public health."

"The number of persons suffering from tuberculosis is variously estimated at from 30,000 to 40,000, and many of these are undoubtedly affecting their associates and thus adding to the extent of the disease. I believe that the time has come when the city of New York should extend its facilities for the treatment of tuberculosis."

He recommends the erection of a sanitarium on the tent plan. The deaths from pulmonary tuberculosis in New York last year numbered 7,571.

THE LAW IN ITS RELATION TO MEDICINE.

By EDWIN S. MACK, A.M., LL.B.

The Physician's Obligation to Act as Witness.

A physician who testifies as a witness may be called upon only to state facts and circumstances which he has observed either casually or in the course of his professional occupation, and in such event his evidence consists merely of narrations of fact, and is subject to the same rule as the testimony of any other witness. But the physician may also be asked to give statements of opinion, that is, testify as to his

inferences from particular facts based on professional knowledge, and such testimony is known as expert evidence. Many physicians are under the impression that they have some particular privilege as expert witnesses, and that they cannot be required to state an opinion or inference in the course of testimony without being paid additional compensation for their professional services. This view, though frequently stated by writers of medical text-books, has very little foundation in the law. The question has been much discussed and the argument has been strenuously urged, that a physician's professional knowledge is a species of property, and that to require him to give the benefits of this knowledge without compensation is virtually a confiscation of his property. The weight of this argument has been felt, and in two or three jurisdictions, notably in Indiana, the courts have held that a physician could not be required to give expert testimony without additional compensation. On the other hand, in the great majority of cases where the question has arisen, the courts have held that no distinction could properly be made between testimony involving opinions and testimony consisting of mere narration of facts. Further, they have taken the position that the giving of testimony frequently involves a sacrifice on the part of a witness, and that the physician must submit to this for the attainment of justice for the same reason that a banker or a business man whose time may be worth $100 a day must consent to serve as witness, or even as juror, when summoned. The matter has also come before the legislatures, and in six of the states statutes have been enacted providing for special compensation for physicians to be paid them either as a matter of course or in the discretion of the court. On the other hand, in Indiana, where the courts originally held a physician entitled to additional compensation, the legislature set aside this rule by enacting a statute requiring physicians to testify on payment of the usual witness fee. These conflicting statutes will show what different conceptions of the question are possible.

In Wisconsin there is no statute governing the subject; the question has not been presented to the Supreme Court, and it is therefore an open one. It is to be presumed, however, that the courts will follow the weight of authority and will hold that a physician can be required to testify without additional compensation as to matters of professional opinion as well as to matters of fact.

The general rule, however, has a qualification which tends to prevent it from causing hardship. Although a physician may be required to give his opinion on the witness stand in answer to a question put to him, he cannot be required to prepare himself for testifying either by

making an examination or by study of the subject. Likewise he cannot be required to remain in court to listen to the testimony so as to give his opinion on it. His obligation as a witness is limited to answering the questions put to him while on the stand from the knowledge he may then have; and therefore he has the right to demand additional compensation before making any examination or study of the question to prepare himself to testify.

Cases have also arisen where physicians have testified when subpœnæd and have afterwards sued to obtain compensation for their expert services; in these cases it was held that the physician could not recover because it was his legal obligation to testify on payment of the statutory witness fee. At the same time the courts have enforced contracts where they have been made in advance providing for additional compensation for the physician, though it is true that in all these instances the physician was required to make some examination or study of the question besides giving his testimony.

It also should be noted in this connection that in Wisconsin a witness who fails to testify when he is legally obligated to do so is under a civil as well as a criminal liability. Not only has the court the power to punish for contempt a witness who declines to testify, but in addition the witness is liable to the party who summons him for any damages he may sustain by reason of lack of his evidence.

Recent Cases.

Smart vs. Kansas City, 91 Mo. App. 586, presents an interesting example of the wide application given the doctrine of privileged communication. In that case the attempt was made to introduce evidence that a patient did not tell her physician of an accident as the cause of certain injuries she suffered. It was held that the physician could not disclose any information he had received and that this included inferences to be drawn from the silence of a patient as well as facts ascertained from direct statement.

In *Burke vs. Foster,* 69 S. W. 1096, a physician attempted to justify himself by showing that the results of his treatment were as good as those usually obtained in similar cases. The court applied the doctrine that the test was not the result of the treatment, but whether or not the patient had been treated with ordinary care and skill, and held that the patient was entitled to the increased chance of cure which would have come from proper treatment.

CORRESPONDENCE.

CHICAGO LETTER.

Leprosy and Its Future in the United States.—In a public lecture delivered at the University of Chicago, Dr. James N. Hyde presented a leper and numerous lantern slides, from cases in the Sandwich and Philippine Islands. He declared the disease a curable one, and was opposed to the plan of transporting lepers to one place. Moreover, we need have little fear of the spread of leprosy in the United States, for we have too much pure water and fresh air.

Chicago Society of Internal Medicine.—The Chicago Society of Internal Medicine has elected the following officers: President, Dr. G. W. Webster; Vice-president, Dr. R. H. Babcock; Secretary, Dr. C. H. Williamson; Treasurer, Dr. M. L. Goodkind.

To Extend the Sanitary District.—If Chicago is to have an uncontaminated water-supply, it is evident that the towns adjoining must also take proper sanitary precautions. This has not been the case. Hence, a bill has been introduced in the legislature to authorize the annexation of all the territory draining into the lake from the Cook County line to the Indiana state line. There is no other way in which the drinking water can be kept free from pollution. Moreover, the work can be done more intelligently and economically when it is under one management.

Gigantism.—At a recent meeting of the Rush Pathological Seminar Dr. Bassoe gave a lantern slide demonstration of a case of gigantism, based on the case of a man who died at the Presbyterian Hospital last summer. The man measured 8½ feet, and was well proportioned. A large tumor mass was found in the region of the hypophysis, but was distinct from it. The hypophysis was not enlarged. (M. M. P.)

BALTIMORE LETTER.

The meeting of the Johns Hopkins Hospital Medical Society held February 2nd, was in the nature of an *X-ray symposium*. The meeting opened as usual with the exhibition of cases. The first case shown was one operated on recently by Dr. Bloodgood. The patient is a young man of about thirty years. Nine years ago he suffered an injury of the upper end of the right tibia. This was a rather insignificant injury but the patient thinks he never quite recovered. The spot has always been sensitive since the traumatism. For the past two or three years, besides the tenderness and pain there has been a slight swelling, but it has not grown rapidly. On examination the bone feels hard and rough and the x-ray shows a light shadow at the upper end of the tibia. The diagnosis of giant-celled sarcoma was made. At the operation, after removing the thin shell of bone covering the growth, it was

found to be a large hemorrhagic granular mass, much like granulation tissue in appearance. The tumor was removed by means of the curette and chisel. Microscopic examination confirmed the original diagnosis. It is now two months since the operation. The cavity left in the head of the bone is rapidly filling with healthy granulation tissue. Microscopic examination of a piece of this tissue reveals no tumor cells. Dr. Bloodgood thinks that when dealing with a comparatively benign tumor of this kind, removal by curette is indicated and that resection or amputation is not justifiable.

After Dr. Bloodgood's talk, Dr. Thomas had two cases of paralysis in the right arm to show. The first case is a young woman who came into the hospital a year ago complaining of paroxysmal pain running down the right arm. The arm was weak and showed some atrophy of the small muscles of the hand. She was treated for some time with electricity but without relief. Complicating this trouble was an hysterical weakness and complete hemianesthesia over the right side of the body. Electrical examination of the arm showed normal response everywhere, except in the small muscles of the hand; these showed the reaction of degeneration. An x-ray photograph was taken at this time and revealed a cervical rib situated on the right side of the last cervical vertebra. Operation was decided on, and Dr. Cushing last July removed the rib and the dense band of tissue that was pressing on the brachial plexus. The pain was immediately relieved but the muscles of the hand still show atrophy and a considerable degree of paralysis. The patient is receiving galvanic treatment at the dispensary.

The second case has many points in common with this. The patient is a female twenty-one years of age. She says that when she was seven years old her right arm became suddenly useless, but no definite history could be obtained. There is considerable atrophy of the arm. The atrophy is most marked in the small muscles of the hand. Examination shows a general loss of power in practically all the muscles of the arm except the flexors of the elbow, some muscles being more affected than others. Those least involved are the triceps, the radial flexor and radial extensors of the wrist. Then come the ulnar flexor and extensor. The muscles most affected are the flexors and extensors of the fingers. The power is almost entirely lost in the intrinsic muscles of the hand. Besides the paralysis there is an area along the ulnar side of the arm in which there is loss of the sense of pain and a slight reduction in touch and temperature sense. There is great decrease in faradic excitability. Thinking that the trouble might be due to a cervical rib an x-ray was taken but nothing found. Dr. Thomas thinks that it may be a case of progressive muscular atrophy following an old acute anterior poliomyelitis.

The exhibition of cases was followed by a very interesting paper on "The X-ray in Surgery" by Dr. Codman of Boston. He gave a very complete account of his experience with it both as a means of diagnosis and of treatment. He thinks the profession is inclined to put too much faith in it as a remedial agent. The last number on the program was a short discussion of the "Physics of the Radiograph" by Professor Ames.

One case was shown before the society at the meeting held February sixteenth. The case was presented by Dr. Briggs. The patient is an Englishman, a farmer, forty years of age. There is nothing of importance in his

family history. He has always been active and says his complexion has always been florid. Five years ago he had considerable trouble with diarrhea. The stools were bloody and contained mucus. Since this time he has never been well. Has had occasional bloody stools since his trouble first began. He was admitted to the hospital on October 24th, 1902, complaining of diarrhea. He was very thin. His face and hands were a bright red. On rest and a low diet his diarrhea left him. The blood count on admission showed 2,700,000 r. b. c., with sixty per cent. hemoglobin. There were large numbers of megalocytes and microcytes, but no nucleated reds were ever found. The blood condition has gradually improved and now the count has reached 4,000,000. There is still a general flush of the whole body. There has been no cyanosis, no edema or palpitation. No etiological factor has been found to account for the anemia. The remarkable point in the case is the redness of the skin with the low blood count.

Two very interesting papers were read at this meeting. The first was by Dr. McCallum and was a report of some of his original researches on the "Absorption of Granular Material from the Peritoneum." He began by giving a brief review of the controversy over the histological structure of the peritoneum, and reached the conclusion after a long series of investigations, that this membrane is continuous, and that the stomata and stigmata described by so many authors are mere artifacts. His experiments were carried on with the object of finding out how granular material was absorbed from the peritoneal cavity. For this purpose carmine was used as it could easily be followed. Dr. McCallum's conclusions, in brief, were that the disappearance of this material from the abdominal cavity, after injection, was largely due to the phagocytic action of the leukocytes. But he still found that the absorption occurred if the carmine was introduced into the abdominal cavity of a dead dog. The particles were found on section of the diaphragm to be evenly distributed between the serosa cells of the peritoneum, and not gathered in any special openings. He thinks that in this case the process was entirely mechanical and that the granules made their way down in the intercellular cement substance. In life, however, the leukocytes play the most important part.

The second paper was one by Dr. Pleasants on "Traumatic Pericarditis and Endocarditis." (R. G. W.)

CLINICAL REPORTS.

MEDIASTINAL TUMORS.

(Special Correspondence.)

During the last month, Dr. Wilhelm Türk, first assistant in the Neusser clinic, Vienna, diagnosed a case of dermoid cyst of the mediastinum. This is said to be the first case of this kind, correctly diagnosed *intra vitam*. The findings were those of an encapsulated pleurisy of the upper and anterior portions of the left chest, and the case was at first believed to be of this nature. Several points in the history and appearance spoke against this diagnosis: 1. the very gradual onset of dyspnea without pain or fever. Of course, this does occur in some pleurisies, especially of the tuberculous variety, but these pleurisies are usually not encapsulated on account of the low grade of inflammation; hence the effusion is in the lower and posterior parts of the pleural cavity. 2. Evidences of great pressure on the part of the mass, e. g., displacement of the heart two finger-breadths to the right of the sternum. 3. The occurrence of a friction after exploratory puncture (only 1 c.c. of fluid was removed). This proved the two layers of pleura to be in apposition.

The deciding factor in the diagnosis was the nature of the aspirated fluid. It was white and greasy, and, on gross inspection, was thought to be pus. Under the microscope, the material proved to be almost pure cholesterin; it contained no pus corpuscles, but some large irregular cells, only part of which were nucleated. These cells were stained by Gram's method, which has been claimed to be characteristic for epidermis (Ziegler's Beiträge, Vol. 21). The case was operated upon by v. Eiselsberg, who removed the cyst *in toto*, after resection of the 3rd and 4th ribs. It proved to be multilocular, as large as a man's head, and contained only material of the kind aspirated—no hair, nails or bone. In spite of the great shock necessarily associated with separating the tumor from the pericardium, the patient was well enough to leave the hospital within three weeks.

Another interesting case from the same clinic was a tumor of the mediastinum, in which the diagnosis offered no difficulties. The unusual feature was the appearance in the sputum of large masses of ciliated epithelium (evidently carcinomatous). The cilia were actively motile for an hour after expectoration, so that the masses somewhat resembled a very lively cercomonas. There were also numerous Curschmann spirals in the sputum. Ciliated carcinomata are extremely rare.

The clinical teaching of diseases of the nose and throat, as a rule, produces unsatisfactory results on account of the difficulty of explaining to the student the things that he should see. This is overcome to a great extent in the Vienna clinics by a very simple device.

A plane triangular mirror is attached to the concave mirror of the instructor—it occupies approximately one-sixth of the whole area of the head mirror. The amount of light lost on account of it is insignificant. On the other hand, everything can be seen in this small mirror, that can be seen by the teacher. Only one student can look into it at one time, but in the course of a few minutes, all the essential features of a case can be pointed out to a class of ten or twelve. Operations on the nose, pharynx and larynx are demonstrated in the same manner. It can be readily understood that the student receives at least a working basis if the most simple anatomical and pathological conditions are thus explained, and if the student repeats the steps of the instructor. It goes without saying that such a demonstration on the patient is of greater value than blackboard drawing or verbal description. If a similar method were introduced into our American schools, it would prove of inestimable value in the teaching of all branches which require the use of the head mirror. (L. M. L.)

PRACTICAL SUGGESTIONS IN THE TREATMENT OF APPENDICITIS.

By H. L. Nahin, M.D., of Milwaukee.

One of the most perplexing difficulties in the treatment of appendicitis is the obstinate constipation. On one hand, it is desirable to obtain complete rest, on the other it is necessary to unload the bowels. Even in a case of abscess formation the unloading of the bowels is desirable for many reasons, and yet while we are attempting to accomplish this, we are likely to be benefiting one structure at the expense of another. The administration of small doses of calomel or any other laxative, no matter how mild, will excite peristaltic movements of the bowels and disturb the much needed rest. Furthermore, by the administration of laxatives we are exposing our patient to the danger of perforation. The administration of an enema is not as objectionable as even mild cathartics, yet this has drawbacks. In the first place it is uncertain. Nine times out of ten the enema, if given high up, will remain in the bowels, only to add to the discomfort and distress of the sufferer; and secondly, if we are not fortunate enough to obtain a movement, the parts are disturbed from the much desired rest.

To overcome the difficulty I have used in a number of cases *colonic pumping* with flattering results. I use the following method:

I introduce high up into the colon a flexible rubber pump, a little longer than the ordinary stomach pump; from two and a half to three and a half feet may be safely introduced into the colon. The tube is to be anointed with vaseline before it is inserted. I then inject through the distal end of the tube, which is provided with a funnel, the following solution, No. 1, composed of one ounce of magnesium sulphate, two ounces of glycerine and one pint of lukewarm water, and if there is much tympanitis two drachms of spirits of turpentine. After all of the solution has been allowed to escape into the colon, the tube is gradually withdrawn about one foot from the point of insertion, meanwhile compressing the distal end so as not to allow any of the fluid to escape before it has had time enough to soften the feces. The time allowed for the solution to remain is from 5 to 15 minutes depending upon the idiosyncrasy of the patient. I then lower the distal end of the tube and allow the watery stool to escape, assisting the escape by alternately compressing and relaxing the air bulb. After the solution No. 1 has escaped, about one pint or more of solution No. 2 is poured into the funnel, and allowed to remain in the colon for a few minutes before being pumped out. This solution, No. 2, which is composed of two per cent. salt solution, may be injected as many times as it is necessary, until the escaping fluid is returned clear and not tinged with feces. This can be repeated twice a day if necessary without any inconvenience to the patient, and with no disturbance of the inflamed parts, and the much desired plastic peritonitis is favored. While it is true that it is a very unpleasant procedure for the physician, yet when we reflect upon what we can accomplish, the comfort of the patient being relieved without "cramps" and without any danger of inducing perforation, the labor on our part is amply compensated.

THE REVISED MEDICAL LAW.

The following revised Medical Law, drawn up by the Committee on Medical Legislation of the State Medical Society, in accordance with the suggestions contained in the last biennial report of the Wisconsin Board of Medical Examiners, has been recommended for passage by the Assembly Committee on Public Health and Sanitation, with some few alterations, the chief of which is that in order for a

college to be deemed reputable it shall conform to the standard of the Association of American Medical Colleges.

AN ACT relating to the State Board of Medical Examiners, and to the registration and licensing of persons engaged in the practice of medicine, surgery or osteopathy in the State of Wisconsin.

The people of the State of Wisconsin represented in senate and assembly do enact as follows:

SECTION 1. The governor shall appoint a board of medical examiners to be known as the Wisconsin Board of Medical Examiners, consisting of eight (8) members. Such appointments shall be made from separate lists presented to him every second year, one list of ten (10) names presented by the Wisconsin State Medical Society, one list of ten (10) names presented by the Homeopathic Medical Society of the State of Wisconsin, one list of ten (10) names of the Wisconsin State Eclectic Medical Society, and one list of five (5) names by the Wisconsin State Osteopathic Asssociation. In case any of said societies or associations fail to present such list of names, the governor may fill vacancies in the board by appointment from the last list filed by such association or society previous to the occurrence of such vacancy. The appointment of each member of said board shall be for the term of four (4) years and until his successor is appointed and qualified; the proportion of the different schools of medicine, as herein provided, shall be preserved. No instructor, stockholder, member of or person financially interested in any school, college or university having a medical department, or of any school of osteopathy, shall be appointed a member of said board. Three members of said board shall be allopathic, two shall be homeopathic, two eclectic and one osteopathic, and all shall be licentiates of said board, and no member shall serve for more than two consecutive terms, provided nothing contained in this act shall be construed as terminating or in any manner interfering with the term of any member of the present State Board of Medical Examiners, but each of said members shall serve out his present term as a member of said board.

SEC. 2. Said board shall elect from its members a president, secretary and treasurer, and shall have a common seal. The president and secretary may administer oaths for the accomplishment of the objects of the board. Said board shall hold regular meetings on the second Tuesday in each January, April, July and October; one in Madison, one in Oshkosh and two in Milwaukee, and such other meetings at such other times and places as it may from time to time determine. The board shall keep a record of all its proceedings and also a register of all applicants for license, together with a record showing their ages, time spent in the study of medicine and the name and location of all institutions granting to such applicants degrees or certificates of lectures in medicine, surgery or osteopathy. Said register shall also show whether such applicant was rejected or licensed, and said books and register shall be *prima facie* evidence of all the matters required to be kept therein.

SEC. 3. All persons commencing the practice of medicine, surgery or osteopathy in any of their branches in this state, shall apply to said board

at the time and place designated by said board, or at any regular meeting thereof for license so to practice, and shall present to said board a diploma from a reputable college of medicine and surgery, that requires at least four courses of not less than seven months each before graduation, no two of such courses to be taken within any one twelve months, and that shall require for admission thereto a preliminary education equivalent to that necessary for entrance to the junior class of an accredited high school in this state, including a one year's course in Latin, or qualifications equal to those adopted by the Association of American Medical Colleges, and that shall after the year 1906 require for admission to such school a preliminary education equivalent to graduation from an accredited high school of this state, or qualifications equal to those adopted by the Association of American Medical Colleges, and shall submit to an examination in the various branches in medicine and surgery usually taught in reputable medical colleges, or if the applicant be an osteopath he or she shall present a diploma from a regularly conducted college of osteopathy maintaining a standard in all respects equal to that hereby imposed on medical colleges as to preliminary education, said college to give three courses of eight months each, no two courses to be given in any one twelve months, and after the year 1909 such college shall give four courses of seven months each, as hereinbefore provided for medical colleges, and shall pass the regular examination of such board in anatomy, histology, physiology, obstetrics, gynecology, pathology, urinalysis, chemistry, toxicology, dietetics, physical and general diagnosis, hygiene, and theory and practice of osteopathy. The examination in Materia Medica, Therapeutics, and Practice shall be conducted by members of the board representing the school of practice, which the applicant claims or intends to follow. After examination, as hereinbefore provided, the board shall, if it find the applicant qualified, grant a license to said applicant to practice medicine and surgery in all their branches in this state, or a license to practice osteopathy therein, which license can only be granted by the consent of not less than five members of said board, and which, after the payment of fees as hereinafter provided, shall be signed by the president and secretary thereof, and attested by the seal of the board. Osteopaths, when so licensed, shall have the same rights and privileges and be subject to the same laws and regulations as practitioners of medicine and surgery, but shall not have the right to give or prescribe drugs internally or externally, or to perform any surgical operation. The fee for examination shall be fixed by the board, but shall not exceed $20.00 in each case, with $5.00 additional for the license if issued. Such fee or fees shall be paid by the applicant to the treasurer of the board and may be applied toward defraying any proper and reasonable expenses of the board; provided, however, that any student who is exempted as a matriculant of a medical college of this state under Chapter 306 of the laws of 1901, whose name is now on file with the Wisconsin State Board of Medical Examiners, shall on the presentation of a diploma from said college, and on the payment of the fees specified in this act, and having satisfied said board that he or she is a person of good moral character, be licensed to practice without further examination by such board, provided that said college maintains its standard.

Every person practicing medicine or surgery in the State of Wisconsin, who, at the time of the passage and publication of this act, has not received a license from said board, and who shall after such passage and publication present a diploma from a reputable medical college and give satisfactory evidence of having been a reputable practitioner of medicine and surgery in the State of Wisconsin continuously since the first day of July, 1897, may in the discretion of the board be granted a license without examination upon the payment of a fee not exceeding $5.00, as determined by said board. Any person appying for such license shall if he or she be possessed of a certificate of registration issued under and according to the provisions of Chapter 87 of the Laws of 1899, present such certificate to said board with the diploma and application for such license and surrender said certificate on the issuance of said license. Any practitioner of medicine holding a certificate from any other state board imposing requirements equal to those established by the board provided for herein, may on presentation of the same with a diploma from a reputable medical college, be admitted to practice in this state without an examination, at the discretion of the board, on the payment of the fee fixed by the board, not exceeding the sum of $25.00.

SEC. 4. All moneys received by the board shall be kept by the secretary thereof who shall also act as treasurer, out of the funds coming into their possession from the fees mentioned in the preceding section; the board may pay all legitimate and necessary expenses incurred by them, their agents or employes in the discharge of the duties of the board, and the members may receive for their services a sum to be determined by the board, not exceeding five dollars for each day actually spent in attending to the business of the board; the secretary shall receive a salary to be fixed by said board, not to exceed one thousand dollars per annum. Such salary, compensation and expenses shall be paid from the fees received by the board, and no part thereof shall be paid out of the state treasury. The secretary shall furnish to the board such bond as they may from time to time direct. It shall be the duty of said board to make a report of their proceedings to the governor at the end of each biennial period, together with an account of all moneys received and disbursed by them, and all moneys in excess of actual expenses shall be paid into the state treasury, secretary of said board securing a receipt therefor, said moneys there to remain as an Emergency Fund which may be withdrawn in whole or in part by said board in case of necessity with the consent of the governor. Said biennial period shall begin Dec. 31, 1904. The provisions of this act shall not apply to commissioned surgeons of the United States Army, Navy or Marine Hospital Service, or to physicians or surgeons of other states or countries in actual consultation with resident physicians of this state.

SEC. 5. Every person hereafter practicing medicine, surgery or osteopathy in this state shall be required to have the license herein provided for, or heretofore issued by the Wisconsin State Board of Medical Examiners, or a certificate of registration issued pursuant to the provisions of Chapter 87 of the Laws of 1899, and a diploma from a reputable medical college or society dated prior to April 20, 1897, and any person having or

hereafter receiving a license according to the provisions of this act, or having such certificate of registration, shall record the same with the County Clerk of any county in which said person shall practice and pay to said clerk or clerks a fee of fifty (50) cents each for recording the same, and said clerk shall enter a memorandum thereof, giving the date of said license or certificate, the name of the person to whom it was issued, school of practice chosen, and the date of such recording in a book to be provided and kept for that purpose. Any such person who shall fail to record his or her license or registration certificate, as herein provided, shall not exercise any of the rights or privileges conferred by such license or certificates. Any any person beginning such practice without having obtained such license, or having obtained such license contrary to law, or any person who, not having such license or certificate of registration herein referred to, shall advertise or hold himself or herself out to the public as a physician, surgeon, osteopathist or specialist in any of the branches of medicine, surgery or osteopathy, or who shall use the title of "Doctor," or shall append to his or her name the letters "M. D." or "M. B.," meaning doctor or bachelor of medicine, or "D. O.," meaning doctor or diplomat of osteopathy, or any other letters or designation meaning any of the titles enumerated in this section, shall be punished by a fine of not less than $50.00 nor more than $100.00 for each offense, or by imprisonment in the county jail for a term not exceeding three months, or both such fine and imprisonment. Any person practicing medicine, surgery or osteopathy, or without authority assuming the title of "doctor of medicine," "doctor or diplomat of osteopathy," "bachelor of medicine," or "physician," or "surgeon," or "osteopathist," or "osteopath," shall not be exempted from, but shall be liable to all the penalties and liabilities for malpractice, which physicians, surgeons or osteopathists are liable to, and ignorance on the part of any such person shall not lessen such liability for failing to perform, or for negligently or unskillfully performing or attempting to perform any duty assumed, and which is ordinarily performed by physicians, surgeons or osteopathists. If any person licensed or registered by said board shall be convicted of any crime committed in the course of his professional conduct, the court in which such conviction is had, may in addition to any other punishment imposed pursuant to law, revcke such license or certificate. Said board shall have the power to adopt such rules for its government and may require the filling out of such blanks by applicants, as it may deem necessary in order to ascertain the true character and qualifications of an applicant for license, and the board may in its discretion refuse to grant license to any person who does not furnish satisfactory proof of good moral and professional character.

SEC. 6. Every person shall be regarded as practicing medicine or osteopathy within the meaning of this act, who shall append to his or her name the letters "M. D.," "M. B." or "D. O.," Doctor, Dr. or any other letter or designation with intent to represent that he or she is a physician, surgeon or osteopathist, or who shall for a fee prescribe drugs or other medical or surgical treatment or osteopathic manipulation for the cure or relief of any wound, fracture, bodily injury, infirmity, or disease, provided however, that nothing in this act contained shall be construed to apply to any dentist engaged in the practice of his or her profession.

SEC. 7. It shall be the duty of the Board of Medical Examiners to investigate all complaints in regard to the violation, or disregard of, or noncompliance with the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers, and it shall be the duty of the District Attorney of the proper county to prosecute all violations of this act.

SEC. 8. No person practicing medicine, surgery or osteopathy shall have the right to collect by law any fees or compensation for the performance of any medical or surgical service, or fees for any service as an osteopathist, or to testify in a professional capacity as a physician, or surgeon or insanity expert in any case, unless he or she holds a license from the Wisconsin Board of Medical Examiners, or the certificate of registration hereinbefore referred to, with a diploma from a reputable Medical College or Society dated prior to April 20, 1897, and has been duly recorded as a practitioner in the State of Wisconsin; provided that nothing in this act contained shall be construed as restricting any court in a criminal action from receiving the testimony of any person as a witness.

SEC. 9. All acts or parts of acts in any wise conflicting with the provisions of this act are hereby repealed.

SEC. 10. This act shall take effect and be in force from and after its passage and publication.

SOCIETY PROCEEDINGS.

MILWAUKEE MEDICAL SOCIETY.

Meeting of March 10, 1903.

The President, Dr. A. J. Burgess, in the chair.

Dr. Almon Clarke was elected an honorary member of the society.

BILATERAL DERMOID CYSTS OF THE OVARIES SHOWING CEREBELLAR TISSUE.

Dr. John M. Beffel demonstrated specimens from a case of bilateral dermoid cysts of the ovaries showing cerebellar tissue.

The specimens were removed from a maiden school teacher. They showed the ordinary dermoid structures—hair, sebaceous glands, sweat glands, a tube lined by columnar ciliated epithelium, some bone and cartilage, no teeth. In addition to these there is considerable glia tissue, and in one cyst is an epithelial prominence within which was found a mass of tissue looking like the brain; upon sectioning this it was found to be an irregular mass of tissue with the exact histologic

structure of a normal cerebellum—the pia mater, the molecular layer, the cells of Purkinje, the granular layer and the white substance. All of these structures are as perfect as the ordinary section of a cerebellum can be.

The finding of cerebellar tissue in this case clears up one disputed point, viz., the presence of "specific nerve tissue" in dermoids of the ovary, which two years ago Samuel Bandler, of New York, in a most exhaustive article in the American Journal of Obstetrics, etc., claimed had not been described. Glia tissue, ganglionic cells and nerves are found in abundance in dermoids.

Dr. Beffel then went into a discussion of some of the theories concerning the histogenesis of ovarian dermoids, emphasizing the theories of Bandler and Bonnet.

This demonstration was meant merely as a preliminary report; a more extended report with drawings of the gross and microscopic appearances will be made shortly.

Discussion.

DR. C. H. STODDARD: Speaking from a surgical standpoint and knowing that in the early years of life the growth must necessarily be small, what factors determine the rate of growth and lead the patient to seek medical advice? Does the increase in growth depend on the increase in the amount of cyst fluid or possibly upon the growth of the hair contained in the tumor, or both?

DR. D. W. HARRINGTON: I should like to ask Dr. Beffel if dermoid cysts may not result from the development of parthenogenetic ova. If dermoid cysts develop as a result of parthenogenesis there is no difficulty in accounting for any or all of the embryonic layers.

DR. J. M. BEFFEL: The question as to parthenogenesis has never been demonstrated. There is nothing to prove that this condition ever occurs. The ovum, even when it developes out of place to any extent at all, is absorbed in a very short time and does not develop a fetus in any character.

DR. A. J. BURGESS: Dr. Stoddard wanted to know, I think, whether any sudden change in the growth occurs. If there is a large secreting surface a large amount of cholesterin, sebaceous matter and often mucous forms, and if there is a large area of mucous or cutaneous glands the dermoids form more or less rapidly according to the size of the secreting area. The rapidity of growth, therefore, depends on their contents unless malignant degeneration occurs. In the latter case the growth may be rapid.

PETECHIAL HEMORRHAGIC ULCERS DURING CONVALESCENCE IN TYPHOID FEVER.

DR. J. M. BEFFEL: I desire to report a peculiar case and would like to hear some comment upon it. A girl, aged six years, who had typhoid fever for three weeks and was making a fair recovery, became impressed with the idea that she was to get up on a certain day and walk with her father. Tuesday morning she got up, walked along the side of the bed, to the dresser, and

on reaching the door she fell. That night she developed petechial hemorrhagic areas over the mucous membranes of the mouth and tongue and covered the pillow with blood. The next day her stool was black. On Thursday she passed a considerable quantity of bright red blood which could only have come from the large intestine; there was no rise in temperature. At this time I considered it as petechial hemorrhage from a severe strain placed upon the bloodvessels of the body, while still under the influence of the typhotoxine. The petechiae in the mouth disappeared by the time the blood came from the rectum, and the latter disappeared within twenty-four hours. I look upon this as a petechial condition extending along the entire intestinal canal.

TUBERCULOSIS OF THE EPIDIDYMIS.

Dr. F. Shimonek presented a clinical report of tuberculosis of the epididymis, which was in substance as follows:

(1) Traumatism or disease of the epididymis are predisposing etiological factors.

(2) Tuberculosis of the epididymis is primary in the vast majority of cases, commencing either in the globus major or minor.

(3) Involvement of the testicle follows, as a rule, within a longer or shorter time.

(4) The disease spreads by continuity and contiguity of tissue, passing along the vas deferens to the seminal vesicles, prostate gland, bladder, ureters, kidneys and to the opposite seminal vesicle, vas deferens, etc. The opposite organs become implicated sooner or later in the majority of cases. While the hematogenous route is possible, the infection by contact and continuity is more probable.

(5) As the external appearance of the testicle is extremely deceptive, for there may be tuberculosis of the parenchyma in its incipiency, it is more rational to remove the testicle in connection with its epididymis, unless it be in some of the very earliest cases, when epididymectomy might be entertained.

(6) When the tunica vaginalis is also involved, a complete removal of the epididymis, spermatic cord, testicle, tunica vaginalis and enlarged inguinal nodes must be done. The diseased tissues should be removed without opening the tunica vaginalis, so as to prevent an infection of healthy tissue.

Open the inguinal canal first, separate the vas deferens from the blood-vessels, pull it out of the internal ring as far as possible, ligate the proximal end, clamp the other end and sever with the Paquelin cautery. Deal with the veins in a similar way. Then close, seal the wound, and carry the incision into the scrotum, gradually shell out the tunica vaginalis containing the testicle and epididymis,

I think that when this operation is done in such a thorough manner, early and late infections can be prevented to a great extent.

In bilateral tuberculosis operation is contra-indicated.

Since there is no special value in a testicle without its epididymis, it is far safer to remove it early.

Meeting of March 24, 1903.

In the absence of the president, Dr. G. D. Ladd occupied the chair.

Dr. J. A. Capps, of Chicago, presented a paper entitled "Hook Worm disease and its rôle among the diseases of America." (This will appear among the original articles in a subsequent issue of the JOURNAL.)

PURULENT METASTATIC OPHTHALMIA IN MENINGITIS.

Dr. Charles Zimmermann read a paper on "Purulent Metastatic Ophthalmia in Meningitis" with the clinical and histological report of a case of purulent metastatic ophthalmia in meningitis, giving rise to meningitic and sympathetic symptoms after thirteen years; enucleation; recovery.

By purulent metastatic ophthalmia is meant a secondary endogenous purulent affection of the eye, commencing in the retina or choroid, caused by conveyance of infectious matter (micro-organisms) from other primarily diseased parts of the body to the eye in pyemic conditions. Such may be traumatic, puerperal or due to internal infectious diseases, or the primary affection may be hidden during life, becoming apparent at autopsy, or not at all, and therefore called "cryptogenetic."

The infection takes place through capillary embolism or through hemorrhages into the tissues, in meningitis by infection of the blood from the meninges and subsequent embolism, or by direct propagation from the meninges through the sheaths of the optic nerve to the eyeball. The latter has been frequently observed, but not a continuous migration of micro-organisms along the sheaths into the eyeball.

Since purulent metastatic ophthalmia in meningitis hardly ever leads to panophthalmitis and is seldom fatal, scarcely any anatomical examinations exist of globes that had grown blind from it. In Z.'s case such an examination has been made and is reported.

A child, aged one year and two and one-half months, in the course of meningitis developed purulent metastatic ophthalmia of the right eye, resulting in blindness, but recovered from the meningitis. After

thirteen years the eye became inflamed with meningitic and sympathetic symptoms, which promptly subsided after enucleation. The anatomical examination showed atrophy of the optic nerve, secondary to phthisis bulbi. The sheaths exhibited no signs of a former inflammation so that direct propagation of the inflammatory process from the meninges through the sheaths could be excluded. The metastatic ophthalmia was apparently due to an embolic process. The most interesting feature was that the diseased phthisical eyeball gave rise to meningitic symptoms after thirteen years. This seems to be very unusual, and, according to Axenfeld, has never been proved with certainty. The meningitic symptoms found a natural explanation in the anatomical proof of a recent inflammatory condition of the episcleral tissue, i. e., a process traveling upwards. A propagation upwards was arrested by enucleation. The sympathetic irritation of the other eye is anatomically explained by the inflammatory changes of the surroundings of a ciliary nerve. Practically the case illustrates the danger dormant in such eyes and the necessity of enucleation if symptoms of renewed inflammation set in.

Discussion.

DR. G. E. SEAMAN: I am not in a position to thoroughly discuss this excellent paper, for the reason that I have had no personal experience with cases of metastatic ophthalmia. The lessons to be drawn from this case are those that Dr. Zimmermann has pointed out, but we may go farther and say that when such a sightless eye, after the lapse of thirteen years, is capable of giving rise to sympathetic ophthalmia, it would be wise to take into consideration the removal of the remains of such suppurative inflammation without waiting for sympathetic irritation to develop. We know that in a large proportion of cases sympathetic irritation is directly followed by sympathetic inflammation, and where this developes the results are almost always disastrous.

CHICAGO MEDICAL SOCIETY.

March Meeting, 1903.

Dr. William A. Evans in the Chair.

Dr. Fenton B. Turck read a paper on "Shock produced by general anesthesia, with relation to disturbance of the blood and gastro-intestinal tract."

The author dealt (1) with the consideration of the anesthetic as a cellular poison; (2) the disturbances of function as the result of the anesthesia; (3) toxins that are evolved either from the direct

effect of the anesthetic, or the disturbances of certain functions of the body.

After narrating his experimental work on animals with chloroform and ether, he drew the following conclusions:

1.—The circulatory disturbance is a direct result of the chloroform and ether, he drew the following conclusions:

2.—The effect of chloroform and ether upon the splanchnic circulation results in congestion.

3.—The direct effect of the toxins of chloroform and ether acting upon cells, with disturbance of metabolism, may produce toxic products.

4.—The resulting elaboration of toxins produces symptoms of auto-intoxication, associated with the formation of hemolytic and agglutinating bodies, and precipitins.

5.—Indirect toxic effects result from retention of toxic products through disturbances of elimination.

6.—There is lessened resistance of the blood serum to normal excreted toxins.

7.—There is lessened resistance of the blood serum to the bacterial toxins.

8.—There is diminished resistance to the development of saprophytic and pathogenic micro-organisms.

9.—This may be partly explained by the changes observed in the sera, such as hemolysis, agglutination, precipitins, etc.

10.—Reflex effects result, such as reflex irritation, set up by the excretion of the anesthetic into the stomach and intestines.

11.—As the result of atony, there is the formation of toxins in the stomach and intestines through bacterial growth.

12.—Atony of the stomach and intestines results in the accumulation of gases, and interferes with the circulation.

13.—There is increased toxicity of the stomach contents in the presence of chloroform and ether.

SYPHILIS AS A CAUSE OF CHOREA.

Dr. L. Harrison Mettler read a paper with the above title, and reported the following case, which he had seen in consultation with Dr. S. L. McCreight:

H. P., male, 11 years of age, born at full term, of German parentage, and showing at present unmistakable signs of inherited syphilis. The father, forty years of age, married about fourteen years, confessed to his wife and former physicians that he had contracted syphilis about nine or ten years prior to his marriage. He has had

several hemiplegic strokes, has been in the insane asylum, and is now at home, a sad picture of irresponsible, harmless dementia, with paresis. The mother is without any signs of syphilitic taint, and denies having had any miscarriages. There are four living children, aged 12, 11, 9 and 5 years respectively, all showing more or less signs of inherited syphilis, such as ozena, skin eruptions, sore throat, diarrhea, Hutchinson's teeth, etc. The patient, who is the second child, appeared to be healthy until he was two years of age, when, without warning, he was taken with five severe convulsive seizures, one following the other in rapid succession, and all occurring within the space of a few hours. The mother supposed that these were attacks of simple infantile eclampsia, and so failed to note details as to the manner of their origin, continuation and termination. It was during these seizures that the boy's "eyes went wrong," as she expressed it, and left him with his present internal strabismus. Diplopia, of course, was present for a time, but now the vision of one eye is almost negative. The examination of the fundi a year or so ago by Dr. McCreight discovered nothing very abnormal. The shape of the head and development of the body show a well-marked condition of degeneracy. About three years ago the mother thought he had an attack of rheumatism, with heart failure. At present, however, there are no signs of organic heart disease. Scarlet fever and measles are to be added to the history. After the convulsions at two years of age, the left side became notably weaker and thinner. There has never been any repetition of the convulsions. At seven years of age the boy suffered his first attack of chorea. It seemed to be slightly more pronounced upon the left than upon the right side. The attack was, however, of the generalized form. Four attacks have occurred altogether, about a year apart, and each more severe than the previous one. Except the last one, they continued only a few weeks, and then gradually disappeared. This intermittence was almost, but not absolutely, complete; in the intervals there were occasional slight choreiform manifestations. The movements during the height of the trouble were all irregular, spasmodic, and incoordinated. They were typically choreic, and not slow or rhythmical, as in the so-called "symptomatic" chorea of the writers. They were partially under the control of the will and except upon the rarest occasions did not occur during sleep. They involved all parts of the body, the head, the face, arms and legs. It was quite impossible to use the knife and fork at table, and at times the movements were so strong and violent as to throw the patient from the chair or couch. There was nothing of an athetoid condition about the movements. The last and fourth attack of exacerbation began about ten months ago, was the most severe of any, and lasted altogether about four months. All the usual remedies for chorea failed utterly to modify the jactitations. The mental state showed a gradual weakening, and there were other signs of mental and physical exhaustion. There has been no cephalalgia. Complaint is made of indefinable, mild, shooting pains here and there about the body. Two weeks after beginning the administration of potassium iodide, there was a noticeable diminution in the jactitations, and in a week or two

more they had ceased almost entirely. At present the child is well. The diagnosis made by the writer was symptomatic chorea, or rather generalized chorea with certain localizing symptomatic manifestations, due to inherited syphilis. The nature of the lesion can be imagined, but cannot positively be defined.

After discussing the nature of chorea, its possible dependence upon syphilis, acquired or inherited, and after showing how inadequately it is referred to by the writers in the books and current literature, the author formulated the following conclusions:

1.—Syphilis, in rare instances, is a cause of chorea and should always be thought of as a possibility in the examination of every case.

2.—Chorea may be the result of acquired or inherited syphilis

3.—Most of the cases of syphilitic chorea are unilateral, belong to the so-called symptomatic, pre- or post-hemiplegic type of the disease; may or may not be associated with other signs of an irritative lesion; are not infrequently developed in hereditary syphilitics, and are to be attributed probably to a functional disturbance of an irritative sort in the cortical or ganglionic motor cells.

4.—The existence and recognition of the two forms of syphilitic chorea, namely, the focal and the generalized, supports the inference that all forms of chorea are but the expression of any one or more of a multiplicity of possible etiological factors, which may disturb the functional activity of the upper motor neurones, these factors being all the way from a gross lesion down to a molecular or chemical change not demonstrable with our present means of investigation. These conclusions lead to the corollary that chorea is not a disease, but merely a symptom.

5.—When syphilis is decided upon as the cause of a case of chorea, that case should cease to be regarded as chorea, and should be promptly and thoroughly treated as syphilis.

INTER-COUNTY MEDICAL SOCIETY.

The spring meeting of the Inter-County Medical Society of Wisconsin, was held at Hudson, Wis., March 17, 1903, with an attendance from six of the fourteen counties included in the Society charter.

The program included presentation of cases by

Dr. Epley, of New Richmond, Epithelioma of the nose.

Dr. Boothby, of Hammond, Cured tuberculosis of the hip and knee.

Dr. King, of Hudson, Gunshot wounds of the head, with formation of aneurism and ligation of the external carotid artery.

Papers were read on

"The treatment of Fibroma of the Uterus," by Dr. McLaren, of St. Paul, and "On Re-organization," by Dr. J. V. R. Lyman, of Eau Claire, President of the Wisconsin State Medical Society.

In the discussion of the latter paper, Dr. Johnson, of Hudson, stated "that in Wisconsin, according to Polk's Directory, there are 2,200 graduate physicians, of whom only 673 are members of the State Society; that reorganization should bring at least 90 per cent. into State and National organizations and that this would so strengthen the hands of the medical profession, that the scene shifters in American politics could be asked and compelled to legalize all measures for preventive medicine."

The Society voted to hold over Dr. Lyman's paper until the subsequent meeting—which follows the annual meeting of the State Society—and to reconsider and act on it at that time, with a view to organization of county societies.

It was voted to hold the mid-summer meeting on July 21, 1903, at New Richmond, Wis.

LA CROSSE COUNTY MEDICAL SOCIETY.

The last regular monthly meeting of the La Crosse County Medical Society was held March 5, 1903, at the new La Crosse Club.

Dr. C. Christensen, of La Crosse, presented a paper entitled "Extra-uterine Pregnancy," which was well received and generally discussed by all members present.

Specimens removed by operation were demonstrated by Dr. Suitor and Dr. Morrison.

At the next meeting, April ?, 1903, Dr. Suitor will read a paper.

EAU CLAIRE COUNTY MEDICAL SOCIETY.

On February 18, 1903, the Eau Claire County Medical Society was organized under the county constitution of the American Medical Association, with eighteen charter members, being, we believe, the first county to organize in the state.

MARINETTE COUNTY MEDICAL SOCIETY.

March 24, 1903.

The organization of the Marinette County Medical Society was perfected at a meeting of the members of the profession in the parlors of the Hotel Marinette on March 24, 1903. The membership will include most of the physicians in the county. The officers are as follows: President, Dr. Redelings; vice-president, Dr. William Sellars, Wausaukee; secretary and treasurer, Dr. Alex Nadeau; censors, Drs. Bird, Lid, and Schroeder.

NOTICE OF SOCIETY MEETINGS FOR APRIL, 1903.

La Crosse County Medical Society, at the La Crosse Club, on Thursday, April 2.

Manitowoc County Medical Society, at the Williams House, on Saturday, April 4.

Brainard Medical Society, at the Milwaukee Hospital, on Wednesday, April 8.

Medical Society of Milwaukee County, at the medical library, 8th floor, Goldsmith building, on Friday, April 10.

Milwaukee Medical Society, at the society rooms, Goldsmith building, on Tuesday, April 14, and Tuesday, April 28.

Fox River Valley Medical Society, at Appleton, on Tuesday, April 21.

Central Wisconsin Medical Society, at Beloit, on Tuesday, April 28.

BOOK REVIEWS.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS; OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. By *Arthur R. Cushny*, M. A., M. D., Aberd. Prof. of Materia Medica and Therapeutics in the University of Michigan, etc., etc. Third ed., revised and enlarged. Illustrated with fifty-two engravings. Lea Brothers & Co., Philadelphia and New York.

This work has not in its previous editions, of course, received notice in this JOURNAL. The character and scope of the work and its

points of divergence from the beaten paths followed for several generations by writers on similar subjects warrant more than a passing notice.

The great majority of the drugs named in the Pharmacopœia are rarely, if ever, used, and knowledge concerning them is therefore rather a matter of curiosity than necessity. It is a waste of the student's time and energy to require him to familiarize himself with their properties and uses, imaginary or real. There is a rather limited number of therapeutic agents with which the student and practitioner of medicine should become thoroughly well acquainted. This number may be variously placed at from one hundred to one hundred and fifty, and some might even place the limit lower than this.

The want, that has really long existed, for a text-book that deals fully and at length with the more important articles of the Pharmacopœia is, in the opinion of the reviewer, most admirably filled by the volume under consideration. Nearly one-third of the entire volume is taken up in the treatment of Alcohol, Atropin, Arsenic, Chloroform and Ether, Cocain, the Coal Tar products, Digitalis, Iron, Mercury, Opium, Quinine and Strychnine, and it will at once strike the practitioner of medicine that these are the most important drugs we have, and are therefore deserving of the most painstaking and careful study.

It has been objected that this book is largely the result of laboratory, rather than clinical investigation, and is therefore and to that extent faulty. Pharmacologic studies are in their nature of the laboratory, and the pharmacologist must be looked to for information concerning the physiologic effects of therapeutic agents, and upon such information and knowledge must always rest rational therapeutics.

The fact that this book is so largely the result of laboratory investigation is therefore to be regarded as one of its chief claims upon the confidence of medical men.

While many drugs find a place in this book which are of little interest or importance, it appears that they have been thus included simply to enable the student to quickly ascertain what they are and what their supposed virtues may be, that he may not be entirely ignorant concerning the same.

It is extremely gratifying and refreshing to observe the attitude of mental skepticism with which many subjects are handled, and to perceive that the mere fact that a patient survived the administration of a drug is not regarded as proof that the survival was due to the

drug. The author, in fact, makes the statement in the preface to the first edition that "the teacher of pharmacology must not only point out the good, but has the more ungrateful task of condemning the worthless. The period of constructive pharmacology has scarcely dawned; at present its chief function is destructive and critical."

It has been said that the best laws that have been passed during the past one hundred years, have been those which have abolished previously enacted laws, and certainly by no means the least valuable parts of this work are those in which past misconceptions of the value of drugs are detected and corrected. The time was, and that not so very many years ago, when the recent medical graduate expected to witness "marvelous effects," "astonishing results," "miraculous improvement" from the administration of certain drugs, and only learned by experience the futility of such expectations.

A thoughtful perusal of the book under review will tend strongly to correct such sanguine views and impel the student to prescribe a narrower boundary for the things he expects to attain, and he will in consequence the oftener attain them.

The old practitioner who has not looked into a text-book of Materia Medica and Therapeutics for ten or twenty years will particularly enjoy, and profit by, a study of this book, for thereby he will learn that very much of practical therapeutics is based on totally inadequate conceptions of the effects produced by drugs. One must change his estimate of the value of the hypophosphites; modify his use of ergot in hemorrhages; abandon alcohol altogether as a cardiac stimulant as well as in the treatment of septic conditions; modify his opinion of the usefulness of phosphorus in nervous diseases, and study more carefully the pharmacology of digitalis, belladonna and strychnia. The medical student and recent graduate will find in this book a veritable mine of information.

On the whole this is the most satisfactory text-book of Pharmacology and Therapeutics that has fallen into the hands of the reviewer. (W. H. W.)

MATERIA MEDICA, THERAPEUTICS, ETC. A Manual for Students and Practitioners. By *William Schleif*, Ph. G., M. D. Instructor in Pharmacy in the University of Pennsylvania. Series of Pocket Text-books edited by Bern B. Gallaudet, M. D. Second edition. Published by Lea Brothers & Co., Philadelphia and New York. 389 pages.

As is the case with all pocket text-books, the subjects are treated in the fewest words consistent with the non-omission of essential

facts. The author has, however, been especially careful and fortunate in selecting such facts in the subjects of which he treats upon which stress should be laid. In his discussion of the various remedies he clearly and concisely states that action of the drug upon which its therapeutic value depends, the minor physiological effects being mentioned only where they are of importance.

The sections on Medical Latin and Prescription writing have been considerably enlarged. The annotated Therapeutic Index of New Remedies is possibly a little too brief, inasmuch as so much attention is now being directed to new remedies; but the selection made for mention is most happy, as the drugs treated have all proven of some value in disease.

The book will undoubtedly prove of great value to students, and as a work of ready reference will meet the approval of practicing physicians. (G. P. B.)

CURRENT LITERATURE.

MEDICINE.

W. H. Washburn, M.D., Jos. Kahn, M.D., O. H. Foerster, M.D., L. F. Jermain, M.D.

Remarks on Achylia Gastrica and Pernicious Anemia.—MAX EINHORN (*Medical Record*, Feb. 28, 1903) reports a series of cases of achylia gastrica and one of pernicious anemia, and reviews the literature relating to the dependence of the latter upon the former disease. The earlier authorities, beginning with Austin Flint, in 1860, believed that pernicious anemia was caused by an atrophy of the secretory glands of the stomach. Recently much doubt has been thrown on this theory, and in 1892 Einhorn wrote that while there might possibly be a causal relation between the two conditions, proof of the same was lacking.

The results of his latest observations are that in most cases of achylia gastrica a normal condition of the blood is found. In one case in which at autopsy a total atrophy of the gastric mucous membrane was found, pernicious anemia did not exist during life.

The presence of gastric juice is occasionally observed in cases of pernicious anemia, sometimes even in increased quantity, as is shown in three of the reported cases. If the atrophy of the mucous membrane were the cause, it would have to be well marked as soon as the symptoms of the blood disease are apparent.

He admits that achylia and pernicious anemia occur together in a few cases, but this may be due to a common cause for both affections, or the

pernicious anemia may find a ready soil in cases of achylia. It is also possible that atrophy of the glands of the stomach and intestines may occur in the last stages of grave anemia, just as analagous changes have been observed in the spinal cord in this disease. (J. K.)

Atypical Typhoid Fever.— C. A. EWALD (*Berliner klin Wochenschrift*, Jan. 26 and Feb. 2, Nos. 4 and 5, 1903) states that typhoid fever in Berlin is less typical and less severe at present than formerly; that inflammatory processes of serous membranes, such as pericarditis, pleuritis and peritonitis as complications, are less common than twenty years ago, and that in consequence an early diagnosis of the disease is more difficult.

The author believes that modern diagnostic measures, such as the diazo-reaction, Gruber-Widal test and splenic puncture, are of little value in early diagnosis inasmuch as the diazo-reaction may be entirely absent during the entire course of the disease; the Gruber-Widal reaction is seldom positive during the first week of the disease, and splenic puncture is dangerous and unwarranted. The difficulties in differentiating typhoid fever during the first week of the disease from acute miliary tuberculosis and acute endocarditis are dwelled upon. Further, typhoid fever during the first week of its course may be clearly simulated by pneumonia, cerebro-spinal meningitis, puerperal septicemia, cryptogenic septicemia and influenza.

The author pursues an entirely expectant plan of treatment. He agrees with Churchman that careful dieting and good nursing is all that the majority of typhoid fever patients require. For the reduction of temperature tepid baths gradually cooled are employed. The diet should be regulated with a view of preventing as much as possible all cell destruction, always selecting that which is least irritating to the gastro-intestinal tract. The author believes that even a short period of starvation is as much to be feared in typhoid fever as the effect of irritating food upon the local process.

(L. F. J.)

Upon the Association of Epilepsy with Heart Disease.— T. L. CHADBOURNE, Assistant Physician at the Ohio Hospital for Epileptics, Gallipolis, Ohio (*Amer. Journal of the Med. Sciences*, March, 1903) enters into a somewhat full discussion of this subject. After a critical review of the literature of the subject from 1834 to the present time, the author studies the cases treated in the Ohio Hospital for Epileptics, and gives somewhat in detail the records of eleven cases which ultimately came to autopsy, and in which there was a concurrence of heart disease.

He was unable to satisfactorily show that there was any direct connection in any of his own cases between the vascular lesions and the epilepsy. There was as a rule a clear history of acute infectious disease, such as might have caused the cardiac lesion, there being a history of rheumatism in five cases, and in one chorea and rheumatism. In some of the cases, as the heart condition grew progressively worse the epileptic seizures became less and

less frequent, in this respect following the general rule in the case of intercurrent affections in epilepsy.

In conclusion the writer affirms that although epilepsy and heart disease coexist in a certain proportion of cases, this is not greater than in non-epileptics, and he does not discover that there is any satisfactory direct proof that cardiovascular disease is a cause of epilepsy. (W. H. W.)

The Meaning and Significance of Leukocytosis. R. N. WILLSON (*Proc. of the Phila. County Med. Society*, Dec., 1902) protests against the *diagnosis* of a case or the *decision* of difficult operative questions on the basis of a leukocytosis alone, as this brings into discredit a clinical sign, which, when properly interpreted in connection with other clinical signs, is of great value. Willson questions the accuracy of the commonly accepted definition of leukocytosis, as given by Cabot, claiming that this term must include not alone every increase in the absolute number of the leukocytes of the blood examined, but also every increase in the percentage count of the various leukocytic forms.

Leukocytosis is absolute or relative; absolute, when there is an increase in the number of leukocytes in the individual case, and relative when the polymorphonuclear forms are in marked excess of the normal percentage (70-75).

It is necessary to make a differential count of the leukocytes, in addition to a determination of their absolute number, in order to determine the presence or absence of leukocytosis, as many cases occur in which a decided increase in the number of polymorphonuclear forms is apparent in the presence of a marked decrease (gradual or sudden) in the total number of leukocytes. Under such circumstances there is suggested either the presence of pus, or some other active inflammatory condition, in addition to a grave loss of power in the natural resisting forces of the body.

In order to determine when the condition can be called a polymorphonuclear increase, Willson from a study of cases presented in detail, has concluded that 80-85 per cent. of polymorphonuclear cells indicates a suspiciously high percentage, and in the absence of an absolute leukocytosis a very serious one. "Over 90 per cent. would appear to be still more indicative of active and grave inflammatory processes and is usually suggestive of purulent or other leukocytic exudates or effusions. Pneumonic consolidations give this picture, as may also acute and chronic pus collections and nearly all septic intoxications. If in any of these conditions the absolute leukocytosis disappears, and the polymorphonuclear percentage continues high, we have a warning of overtaxed powers of resistance," and the patient requires scrupulous attention.

In one remarkable case, described in detail, there was a moderate absolute leukocytosis (14,000) without an increase in the number of polymorphonuclear cells. There were present a typhoid infection, tending to diminish both the absolute number of leukocytes (which it failed to completely do) and the polymorphonuclear percentage, and a cystitis, with the opposite tendency; the result as to leukocytosis (absolute and relative) seems to have been a compromise, for 14,000 leukocytes in this case may not have been a leukocytosis. Willson considers it more likely, however, that this was a

leukocytosis as an expression of the cystitis, held in check by the typhoid infection. The reaction of the polymorphonuclear forms was interfered with by some unknown factor, rarely operative.

In order to be of any value and not misleading, the leukocyte examinations must be made frequently, even constantly, and studied in connection with other signs composing the clinical picture.

"Perhaps one of the most pertinent suggestions given by an increase in the total number of leukocytes is obtained when constant examinations show either a persistently high count, accompanied by symptoms and physical signs that point to a localized process; or a gradually but steadily increasing count (total) under similar conditions. A gradually falling leukocytosis *usually* indicates a bettering of the general physical condition. We have already laid sufficient stress upon the study of the polymorphonuclear percentage to fear that this last assertion will be misinterpreted. Occasionally every physical sign and symptom will abate and improve, and the total number of leukocytes fall to or below normal, though the actual condition is one of grave seriousness. In such cases the relative leukocytosis may be relied upon to warn of impending danger; at this point all clinical symptoms and signs fail."

(O. H. F.)

Myopathic Dorsal Rigidity.—PROF. H. SENATOR (*Berliner klin. Wochenschr.*, Feb. 9, No. 6, 1903) exhibited a case of myopathic dorsal rigidity or deforming spondylitis, as it has been termed, at the Charité. The patient a traveling salesman, was thirty-six years of age, and presented a negative family history. He had the usual diseases of childhood, an attack of erysipelas at fifteen, appendicitis, gonorrhea and syphilis. The present trouble began eleven years ago with pain in the right hip radiating down the thigh and to the back. In 1896 he complained suddenly of marked stiffness in the back in the lumbar region, which extended upwards involving the entire spine. He was treated by massage without results. Later he was given hypodermics of sublimate solution, Russian baths and massage, with marked temporary benefit. The patient appears anemic, of good muscular development, with the cervical and inguinal glands enlarged, and thoracic and abdominal organs apparently normal. There is an entire absence of normal lordosis in the lumbar region, the back being perfectly straight from the scapula downward. The movements of the spinal column are greatly hampered, the patient being unable to bend his body forward to any degree. Lateral motion is exceedingly limited. Movements of the head are almost impossible. The sternocleidomastoid and scalenic muscles are tense and contracted. No tenderness is present over the spinal column. There is present no increased mechanical excitability of the muscles, but electrical excitability is almost completely lost. Muscular rigidity and stiffness entirely disappear under chloroform narcosis.

The author believes that the disease present is a chronic myositis of rheumatic origin, beginning in the form of a lumbago and extending to all the muscles of the back, that the rigidity of the spinal column is due to changes in the soft tissues, notably the muscles, and that if any changes exist in the spine, they are secondary to muscular changes. (L. F. J.)

PEDIATRICS.

T. H. Hay, M.D., R. C. Brown, M.D.

Rickets. ISAAC A. ABT (*Clinical Review*, March, 1903) lays stress on the fact that prolonged use of sterilized or heated food is productive of the disorder, that unboiled milk is less liable to produce it, and under the head of dietetic treatment puts the following conditions as of utmost importance: 1st. Food should be readily digested without giving rise to pathologic fermentation or putrefaction. 2nd. The food should be fresh. 3rd. It should contain as much fat as the child is capable of digesting. 4th. Fruit juices, beef juice and the animal broths undoubtedly exert a favorable influence in the cure of the disease; these latter may be said to be anti-rachitic foods.

In the medicinal treatment his preference is for cod-liver oil. Of phosphorus he says: "Personally I have never been able to convince myself that the results of treatment with this drug were any more brilliant than in those cases in which it was not employed." Of the use of suprarenal extract, highly spoken of by Stoeltzner, he says: "We have used the suprarenal extract as advised in a number of our own cases, without observing any benefit." Of the more recently recommended lecithin he says: "On theoretical grounds one would be led to believe that this product, on account of the contained phosphorus combined in the most favorable manner, might be of value, but it remains for the corroboration of clinicians to substantiate this view."

(T. H. H.)

Pasteurized and Sterilized Milk as a Cause of Rickets and Scurvy. E. M. SILL (*Medical Record*, Dec. 27, 1902) finds that in one hundred and seventy-nine cases of infants fed during the summer months on sterilized milk and during the winter months on pasteurized milk, ninety-seven per cent. showed unmistakable signs of rickets or scurvy.

These observations were made in a large medical dispensary where there was a well equipped milk laboratory and the milk was carefully modified to suit the age of the child, every precaution being taken to make the bottles absolutely clean and sterile before using.

He believes that uncontaminated milk is necessary for successful infant feeding, but contaminated milk, no matter how carefully modified and pasteurized, will cause disordered digestion and improper assimilation in the young child.

A pure milk should be obtained clean from the cow, it should be received into sterilized quart bottles and cooled immediately to a temperature of 40° F., at which temperature, it has been shown, all bacterial growth is arrested.

In conclusion he says that while cow's milk is generally acknowledged to be the best substitute for mother's milk. it is not bettered by sterilization or pasteurization; on the contrary this treatment undoubtedly makes it the direct cause of rickets and scurvy and kindred diseases in children.

(R. C. B.)

The Effects of Tight Diapers.—A. C. COTTON (*Archives of Pediatrics*, Feb., 1903) wishes to call attention to the improper clothing of children.

Tight clothing may interfere with respiration, circulation, digestion and prohibit voluntary muscular movement. Tightly pinned diapers of unyielding cloth are very likely to cause pelvic contraction. In the writer's opinion a great number of bow legs are due to the mass of cloth between the child's thighs. Skiagraphs are given supporting his contentions.

He believes that diapers should be made of light material and suggests the use of absorbent cotton pads retained in place by a T bandage. He suggests that the general clothing should be loose, and has found that the three-piece suits suspended from the shoulders are satisfactory. The author has devised a garment which is in the form of a bag pinned about the neck and closed below by a draw string, which is being satisfactorily used in several hospitals. (T. H. H.)

Feeding in Early Infancy.— JOSEPH E. WINTERS (*Medical Record*, March 7, 1903) calls attention to the fact that the astounding mortality of children in the first year of life proceeds from diseases that have their inception when the stomach is unequal to any function except that of absorption, the mortality results from improper methods of feeding.

Nature has provided a food absorbable without digestive effort and rich in proteid and minerals for immediate development; analysis and synthesis cannot provide a food having the composition and properties of mother's milk at the beginning of lactation, one that is suitable to the undeveloped state of the digestive organs. He claims that with proper regulation of diet before confinement and during the lying-in period every mother can nurse successfully during the first few weeks.

For the first two months the mother and child are mutually dependant. Taking the child from the breast impairs the health of both. If a child could be kept at the breast for two months the mortality of infants would be reduced to a minimum and post-partum ailments of mothers would disappear.

In cases where there is no alternative but artificial feeding, a fac-simile of woman's milk is the only substitute. A duplicate of woman's milk should conform unerring to the following laws:

"First—The constituents must be identical with those in human milk: They must be proportionate to the demands for growth.

Second—These constituents must be of animal origin: Constituents other than those from an animal source are deficient in qualities essential for growth and development.

Third—Vitality of mineral and proteid constituents must be unimpaired: A temperature much above that of blood impairs vitality, by dissolving the loose chemical union of mineral and proteid in milk. In this state minerals are not assimilated.

Fourth—It must contain nothing foreign to milk: Anything adventitious vitiates the substitute.

These are laws of Nature, inflexible, unalterable, infallible, eternal. Infringement of them is the cause of the infamous, the shameful, the humiliating mortality from artificial feeding.

The only food which can be made to fulfill Nature's laws is cow's milk.

Human milk and cow's milk contain the same constituents. They differ in their proportions.

Human milk has a low percentage of proteid, a high percentage of fat. In cow's milk these constituents are in nearly equal proportions. The perplexing, troublesome characteristic of cow's milk is the indigestibility of its proteid for a new-born child. During the first three days of life a child cannot digest more than one-fourth of 1 per cent. of the proteid of cow's milk; during succeeding days of first week, one-third of 1 per cent. In second week, one-half of 1 per cent.; in third week, three-fourths, and in the fourth, fifth, sixth, seventh, and eighth weeks, 1 per cent."

The cream used should be that of nature's own formation, gravity cream; machine made cream is indigestible for an infant on account of the coherent fat globules.

Pasteurization dissolves the loose chemical union of mineral and proteid in milk. Food in which the chemical union of mineral and proteid is even partially dissolved, is unfit for infant food, therefore the pasteurizer should be discarded. Inadequacy of mineral and proteid as vitalized by the hand of nature is the sole factor in the etiology of rickets.

Physiological chemistry also forbids the use of manufactured food, or the deterioration of milk by barley or other cereal for feeding in early infancy. A fac-simile of woman's milk—a vital living fluid is the only substitute.

Dr. Winter's article contains the formulas from actual analysis for the home modification of bottled cow's milk.

Acute illness in a bottle-fed child necessitates recourse to a weaker formula.

He claims that dietetic error is the sole cause of diarrhea and cholera infantum and attempts to shut out the theory of specific germ origin. (This statement I believe impairs considerably the value of an otherwise most excellent article, for although we may have a diarrhea without the presence of a germ, Dr. Winters seems to have overlooked the fact that the inflammation caused by error in feeding may afford a nidus for the development of a specific germ, and it is rather absurd in the light of our present knowledge, to claim that cholera infantum can be due to an error in dietetics alone.—R. C. B.)

The Clinical Value of Blood Pressure Determinations as a Guide to Stimulation in Sick Children.— HENRY W. COOK (*Amer. Journal of the Med. Sciences*, March, 1903). The author's studies were made with the hope of determining a more accurate criterion for the choice and administration of stimulants in view of the unreliability of the character and rate of the pulse in children.

The instrument used was his own modification of Dr. Cushing's, which is itself a modification of the original Riva-Rocci sphygmomanometer, registering the maximum arterial blood pressure, which the author considers the best index of the pulse force.

As a preliminary guide to stimulation, blood pressure determinations were made in a number of cases when no need of stimulation was apparent (normal children and convalescents) in order to obtain some idea as to what constitutes a normal for different ages.

Observations were then conducted upon cases receiving routine or occasional orders for stimulation. in order to find more exactly what effect each drug was having upon the systemic blood pressure. The routine stimulants were alcohol, strychnine, and digitalin, and occasionally atropine. As a rule, hypodermic administration of the strychnine, digitalin and atropine, was found most satisfactory, as the action was more prompt and certain.

Strychnine and digitalin were given in equal dosages, 1/400 to 1/200 of a grain according to age or necessity. Strychnine caused a rise of blood pressure in from ten to twenty minutes; digitalin was more immediate in action, from five to ten minutes, but the action of the strychnine was maintained for a longer time.

"The effects of alcohol for individual doses were not uniform; sometimes a brief rise in blood pressure followed quickly, at others no change was apparent, and in a few cases a slight fall followed its administration. Many cases, however, showed a gradual, steady, and well maintained rise under repeated doses; and at the same time evidenced improvement by general symptoms, so the best effects of alcohol would appear to be the result of repeated, rather than individual, doses." A similar rise was observed as the result of administration of food without whiskey, also accompanying crying, restlessness or any other excitement.

"Following current opinion, infusions of salt solution were frequently used, with indefinite results. In no case was blood pressure more than very transiently raised. Many cases showed after insertion of the needle a temporary rise, which sometimes remained as long as there was local tension at the place of infusion. In cases most in need of stimulation there was no reaction even to needle-puncture, and in some cases there was a slight fall in blood pressure." The benefits derived from infusion were through elimination of toxins or by supplying to the tissues fluid that could not be obtained in other ways, but the author found little that indicated a true stimulating action aside from local irritation. In cases of collapse with marked cyanosis, a hot mustard bath seemed occasionally beneficial and worth trying.

Atropine was not often used but seemed beneficial in some cases, especially those with respiratory distress.

In conclusion the author says: "I wish again to insist, that it is not meant that blood pressure observations should take the place of other signs and symptoms, but that an accurate estimation of arterial tension furnishes an additional and not invaluable aid to stimulant therapy." (T. H. H.)

THERAPEUTICS.

Chas. H. Stoddard, M.D., B. L. Schuster, M.D.

Treatment of Progressive Paralysis and Toxic and Infectious Psychosis with Saline Infusions.—Sahli, in 1890, first recommended the use of saline infusions in mental affections to overcome conditions of inanition. DONATH (*Deutsche med. Wochenschrift*, Feb. 5, 1903), reports marked success in cases of progressive paralysis, tetany, melancholia and cerebral syphilis. In cases of progressive paralysis he reports increase of muscle force with refreshing of memory. Patients with confused ideas and marked memory

defects, were enabled to give correct data, and to solve arithmetical problems correctly. Their speech and handwriting improved. The author does not know whether the effects are of lasting benefit. At any rate he is certain that saline infusions represent a valuable adjunct in the treatment of progressive paralysis, and are often capable of arresting the rapid progress of this disease. He uses weakly alkaline, isotonic solutions. The composition is:

Kalii sulfurici	0.25
Kalii chlorati	1.00
Natrii chlorati	6.75
Kalii carbonici	0.40
Natrii phosphati	3.10
Aqua destill	1000.00

The injection is made at intervals of three and four days in quantities of 500—1000 cc. at body temperature. A rise in temperature to 39.0 C. usually occurs after injection. It subsides in a day or two.

Where subcutaneous infusions can not be made, the author recommends high intestinal saline infusions in quantities of one-half liters. (B. L. S.)

Enuresis.—H. B. SHEFFIELD (*Post-Graduate*, December, 1902), says there are two varieties of enuresis, the nocturnal and the diurnal, the latter being rare in children. The affection may be functional or organic. Of the functional variety there may be a spasmodic contraction of the detrusor muscle in nervous irritable children, or an atony of the sphincter in those of feeble general health. There may be some organic condition even in these cases, which must be sought and remedied.

Sheffield gives the usual advice concerning frequent evacuation of the bladder in the daytime, having the child sleep on the side, raising the foot of the bed, etc., and recommends the following prescriptions:

Ext. ergot	3 oz.
Ext. rhus tox	1 oz.

M.S.—Five to ten drops every 4 to 6 hours, to a child 6 years old.

In hyperesthesia of the neck of the bladder:

Ext. hyoscyami	½ oz.
Nat. bromidi	1 oz.
Aq. anisi	1 oz.
Syr. simplicis, ad	2 oz.

M.S.—Teaspoonful every four to six hours to a child six years old.

He also uses sinapisms over the lumbo-sacral region and, as a last resource, gradual dilatation of the posterior urethra.

HERBTMAN (*Revue Medicale*, Dec. 31, 1902), recommends massage for enuresis. The patient is placed in position *a la vache* or genu-pectoral. The index finger is introduced into the rectum to the neck of the bladder and this is massaged gently, first transversely, then longitudinally, for two or three minutes, then concussive movements are made for two minutes. Five cases

are reported with good results. (I have never seen any mention in the text-books or elsewhere of a method used by Monti, of Vienna, for enuresis. It consists in restoring the tone of the parts by appropriate exercises. He has the patient stand with the back to the wall and successively cross one leg over the other, touching the wall with the heel as far as can be reached. This method exercises the muscles of the perineum and, in addition to other methods, is quite effective.—C. H. S.)

Ipecacuanha.—R. KOBERT (*Therapeutische Monatshefte*, Aug., 1902) after giving a brief historical résume, following the introduction of ipecacuanhae in medicine in 1680, gives an account of the recent researches he has made with Carl Lowin in the pharmacological action of ipecacuanhae.

The two genuine ipecac roots, the Rio-Ipecacuanhae (Brazil), and that which is known as Carthagena Ipecacuanhae (New Grenada, Columbia, S. A.), contain three alkaloids: psychotrin, emitin and cephaelin in variable quantities.

Psychotrin, present in the proportion of 0.1-0.2 per cent., is slightly poisonous and of no therapeutic value.

Until 1894 emitin and cephaelin were thought to be one alkaloid, emitin. They are very similar in chemical composition and in their pharmacological action. Both greatly irritate skin and mucous membranes, particularly the conjunctiva. Given subcutaneously they are rapidly absorbed. They exert a marked toxic action upon the heart (paralysis without primary excitation) and cause inflammation of the kidney and of the gastro-intestinal tract. Vomiting does not occur after hypodermic administration of small doses. Emitin paralyzes the heart in much smaller doses than does cephaelin.

As the hypodermic application of ipecac or its alkaloids is contra-indicated, the therapeutic value lies in their administration by the mouth. Kobert finds that emitin primarily causes nausea and expectoration, while cephaelin when it enters the stomach produces prompt and light emesis.

On account of the injurious action of the emitin upon the heart, the author believes that ipecac need not be given internally, but that local application to the throat and larynx, for example, by gargle, spray or brush, would by its reflex action induce nausea and expectoration. Vomiting could not result, as the alkaloid cephaelin does not enter the stomach.

For these applications the author recommends the fluid extract or tincture of ipecac, which are to be made from the Carthagena variety and not from the Rio. The former is not officinal in Germany, Great Britain or the United States. It contains almost twice the amount of cephaelin and less emitin than the Rio quality which is officinal. As an emetic in croup or pseudo-croup the author recommends ipecac in powder in doses of 0.5-1.0 made from the Rio quality. The infusion of ipecac should not be used as the ingredients are incompletely abstracted; it is expensive and the solution tends to promote decomposition of the alkaloids. (B. L. S.)

Antithyroidin.—SCHULTES (*Münch. med. Wochenschr.*, No. 20, 1902) has made investigations on the action of a serum obtained from sheep and dogs,

following a suggestion from Ballet and Enriquez. He reports one case treated by the use of the new body termed antithyroidin, obtained from this serum. using at first 7½ grains and working up to 70 grains three times daily. After seven weeks of treatment, the patient, who had all the symptoms of the disease in a marked degree, had so improved that she was what might be termed well. (C. H. S.)

Hypodermic Purgatives. Apocodeine.—WALTER E. DIXON (*British Med. Journal*, No. 2181, 1902) says we have long sought a drug which might be used hypodermically to produce prompt evacuation of the bowels in such conditions as apoplexy, unconsciousness and after abdominal operations. He has tried hydrochloride of apocodeine, using from 30 to 40 minims of a 1 per cent to 2 per cent solution. This must be neutral in reaction and is to be filtered before using. The action of the drug is to lower blood-pressure, produce vaso-dilation and increase peristalsis, all probably as a result of its sedative action on the sympathetic inhibitive ganglia. (C. H. S.)

Respiratory Gymnastics and their Application.—HOFFMAN (*Therapeutische Monatshefte*, Oct., 1902) calls attention to the diverse therapeutic value of deep inspiration and deep expiration.

Owing to the active muscular action in expanding the lungs, the action of the diaphragm and the greater use to which the auxiliary muscles of respiration are applied, the inspiratory apparatus is stronger and preponderates over the expiratory apparatus. The tendency of the thorax is therefore to assume the inspiratory position. In senile emphysema, for example, the alveoli in part lose their contractility and become useless for respiratory purposes. In deep respirations, and particularly deep expiration, this tendency would be largely overcome. The abdominal circulation and the condition of the abdominal organs would be greatly improved, for the deep respiration would by the diaphragmatic movement constitute a rational internal massage. The author therefore recommends regular daily respiratory exercise in all conditions of emphysema, habitual constipation, hemorrhoids, syncope and sea-sickness. In the latter conditions he attributes the beneficial effects to improved cerebral and abdominal circulation, improved aeration of the blood, and last, but not least, to psychic influence. (B. L. S.)

SURGERY.

F. E. Walbridge, M.D., H. A. Sifton, M.D., F. Shimonek, M.D.

Gastro-Enterostomy.—MAYO ROBSON (*Lancet*, Feb. 28, 1903) reviews this subject very completely, reporting a large number of cases to illustrate the conditions in which he believes this operation to be of great service. In the 21 years since the operation was first suggested and carried out, great changes have taken place in the methods of technique so that the mortality,

which in the first reported cases approached 65 per cent., has been reduced to 5 per cent. in the hands of good and careful operators. He calls particular attention to the fact that a long course of preliminary treatment is wholly unnecessary and often detrimental. Washing out the stomach once or twice a day for two days prior to operation is sufficient. He recommends the simple continuous suture either applied alone or in conjunction with his own decalcified bone bobbin. He thinks the Murphy button should be used only under exceptional circumstances. He favors the posterior in preference to the anterior operation, but under certain conditions, such as a short mesocolon and adhesions behind the stomach, he advises the use of the anterior anastomosis. The author is very heartily in favor of making an anastomosis in cases of cancer of the stomach and duodenum even though the cancerous growth can not be removed, as he believes that the amount of comfort the patient enjoys more than compensates for the risk of the operation. In atonic dilatations of the stomach, strictures of the pylorus and chronic ulcerations, gastro-intestinal anastomosis gives permanent relief when properly carried out. In conclusion, he says that if the procedure is to hold its own as one of the most beneficial operations in surgery, it must be done with a very small mortality which can be effected only by observing every care in detail before, at the time of, and subsequent to operation. (H. A. S.)

Some of the Complications of Abdominal Surgery.—ROBERT T. MORRIS (*New York Med. Journal*, March 14, 1903), in his emphatic way gives his views on some of the complications of abdominal surgery.

He first considers the question of anesthetics, and says that with our modern refinements in anesthetics the mortality from this source is much less than formerly. He prefers nitrous oxide as a preliminary to other anesthetics, or in conjunction with oxygen as a complete anesthetic.

The symptoms of chloroform paralysis of the vasomotors are alarming for the moment, but are temporary if promptly relieved by our resources. The complications from ether are more persistent and the prognosis must remain in doubt for some time. The lasting complications following ether are gastritis, bronchitis and nephritis; they are, as a rule, not serious and usually yield to treatment.

Iodoform poisoning is a complication often confounded with septicemia. One constant difference is the fact that in iodoform poisoning the wound looks well while the patient does not. In septicemia neither the wound nor the patient looks well.

Hemorrhage into the peritoneal cavity, as long as the blood does not become septic, is not so serious because absorption takes place rapidly. Shock is intensified by prolonged operation and gauze packing.

Septicemia is a grave complication and taxes the skill and knowledge of the surgeon. (F. E. W.)

Movable Kidney.—W. W. KEEN (*Clinical Review*, March, 1903), at a surgical clinic held at Mercy Hospital, Chicago, stated that the cause of

floating kidney is not clear and that, while it occurs most frequently in women who have given birth to a number of children and have lax abdominal walls, it also occurs in unmarried women, and occasionally in men. The right kidney is the one most frequently affected.

The great pain and disturbance depend upon the kinking of the ureter; this frequently leads to the production of a slight or considerable degree of hydronephrosis which may be followed by a destruction of the function of the kidney. It is wiser to restore such a kidney to its normal position and suture it there by one method or another, because, in time, it will unquestionably lead to pain and disturbance, more especially in the case of a woman who looks forward to a pregnancy.

Keen objects to passing sutures through both walls of the wound and the substance of the kidney, for the reason that the silk when sufficiently drawn together, is apt to cut through the friable kidney and make the operation a failure. Instead he prefers to pass the needle through one wall and then through the kidney, tying the latter simply to one edge of the wound.

In a large number of operations on movable kidney Keen has had no failures. It is important to pass the sutures only through the cortical layer, and to carefully avoid the central layer, which latter occurrence would be characterized by bloody urine. This simple method is satisfactory and has in no case been followed by hematuria. To insure success, it is imperative to remove as much of the fatty tissue surrounding the kidney as is required to enable the thorough approximation of the kidney to the muscles.

Attention is drawn to an anatomical arrangement of the fat surrounding the kidney, which Keen has many times observed and which is not mentioned in most of the works on anatomy and surgery, i. e., two distinct layers of fatty tissue surround the kidney, first, that which should be called the transversalis layer of fat, and secondly, the proper perinephric fat or fatty envelope surrounding the kidney itself; a distinct interval between these two layers will be found which is recognized by a layer of connective tissue similar to that found, for instance, between the internal oblique and transversalis muscles. These observations were substantiated by Dr. Craig.

It is important to preserve the ilio-inguinal and ilio-hypogastric nerves, which are usually exposed in the lumbar incision and may suffer division, and which, unless reunited, would lead to a disagreeable area of painful anesthesia. (F. S.)

Inguinal Hernia. —W. W. KEEN (*ibid.*) in the course of some remarks on inguinal hernia, says: On the whole I think the Bassini operation better than the Halsted, but when the cord is very large on account of many and large veins, it is best to remove most of them, leaving those near the vas deferens, for it would be dangerous to attempt to make a canal for it.

I believe the Ferguson modification a very good operation, having performed it several times with good results. This operation enables one to close the entire inguinal canal including the internal ring. Its characteristic lies in placing the cord into the abdominal cavity, between the junction of the conjoined tendon with Poupart's ligament, and the transversalis fascia. The excessive handling of the cord is obviated and this is an important item. (F. S.)

The Present Status of Surgery of the Gall-Bladder and Bile Ducts.—W. J. MAYO, of Rochester, Minn. (*Medical Record*, Feb. 21, 1903) gives his views of the present status of gall-stone surgery based on his experience in 454 operations. Mayo believes that the accepted percentage of persons having gall-stones is too high, but believes it to be five per cent. or more.

He believes it justifiable to remove latent gall-stones when found in an apparently healthy gall-bladder, provided it does not add to the general operative risk. He also believes that the proportion of actually "slumbering" gall-stones is much less than is supposed, that in a considerable number of cases the term is a relative one and means that disturbance is so slight that the cause is unsuspected.

Latent or slumbering calculi become active through infection and mechanical interference with drainage.

Probably all slumbering calculi contain encapsulated bacteria needing but some interference with drainage to start them into activity, as thick stagnant bile is a fairly good culture medium, or reinfection may occur from the intestines directly or through the portal circulation.

On account of the probability of extention of the infection, the safety of operation (less than 1 per cent. mortality) and the permanency of results, early operation in active gall-stones should be advised. "In this field of surgery delay breeds misfortune."

After infecting the gall-bladder and bile ducts the calculi may become but an incident in the process which they initiated.

Repeated attacks of infection cause thickening of the gall-bladder, which interferes with its elasticity and limits its power of contraction, introduces the element of tension and increases the severity of symptoms.

The stone may now be forced into the common duct there to remain, continue on into the intestines, become encysted in a thick-walled pouch or to pass into the intestine through adhesion. At this stage operation is more difficult and mortality greater.

It is in these chronic infective cases that cancer is liable to occur. Five per cent. of Mayo's cases were cancerous. He believes that the chronic inflammatory condition in the gall-bladder caused by gall-stones is the pre-cancerous condition.

Infection of the liver ducts is the most common cause of death after operation. Drainage to the surface in all cases of cholangitis is the only safeguard.

26 cases of chronic cholecystitis, without stones, but with the same symptoms, were relieved by drainage of the gall-bladder.

Every gall-bladder containing stones is probably infected, although when the ducts are free and the bile meets with no obstruction symptoms are slight or wanting.

Closing the gall-bladder and abdominal incision, the so-called ideal operation, is unsafe. Cholecystotomy with drainage is the operation of choice.

Gall-bladders with thickened walls and obstructed cystic ducts should be removed. When the liver ducts are involved the cystic duct should be left open for free drainage to the surface. In place of removing the entire gall-bladder Mayo amputates the fundus and removes the mucous membrane which facilitates drainage. The cystic duct is not ligated.

In choledochotomy drainage is maintained both from the choledochus and gall-bladder. (F. E. W.)

Fractures of the Patella.—In the abstract "Fractures of the Patella," p. 233 of the Journal, the paragraph beginning: "The non-surgical treatment, etc.," requires corrections as follows: "Bloodless methods of treatment vary from the simplest to the most complicated. The results are not so much dependent upon the various methods as upon the extent of the injury, etc. When the capsule is extensively lacerated, or when comminuted fracture, rotation of the fragments or interposition of soft tissues exists, bloodless methods can be of no avail." (F. S.)

ORTHOPEDICS.

Geo. P. Barth, M.D., H. E. Dearholt, M.D.

The Bloody Reposition of the Femoral Head in Irreducible Dislocations of the Hip.—GAVET-LYON (*Revue de Chirurgie*, July and Aug., 1902) quotes several cases from literature and gives observations on one of his own, describing the indications and operative technique. He declares that bloody reposition deserves to be the classical method of treatment in old irreducible luxations of the hip. The operation is not severe and gives better results than other methods, at times even an ideal functional result; nearly always motion in the joint which allows of an almost normal gait, the operation making the shortening practically unnoticeable. With good technique reposition is possible in almost all cases. Contrary to the usual procedure the outer incision on the trochanter is generally sufficient.

The same rules apply to pathological luxations following acute affections, inasmuch as the changes produced bear a close resemblance to traumatic dislocations.

Bloody reposition is rarely indicated in coxalgia in view of the general condition of the patient, the bone changes and the danger of re-awakening the process, yet in well-differentiated cases of tumor albus of the hip joint, the operation may be practiced with benefit. (G. P. B.)

A Case of Typhoid Spine.—In what Dr. Gibney has said is the most complete history of a case of typhoid spine on record, Dr. L. W. Ely (*Med. Record*, Dec. 20, 1902) gives a report of the course of the disease as experienced by himself. A careful account of the subjective symptoms, with the addition of the records of attending physicians should make the report a valuable one. Dr. Ely maintains that the condition is an ostitis, resembling a lumbar Pott's disease, except that it is more acute. Mindful of Osler's theory of a neurosis, he had hysteria excluded by a specialist in nervous diseases. Tuberculosis was suspected, but was excluded. His case developed a lateral curvature. At times opium failed to relieve the pain and muscular spasms, and chloroform and ether had to be resorted to. Rest was, of the therapeutic measures, the only one productive of good. This was secured during the acute stage by a gas pipe frame, followed later by a plaster jacket, which was replaced by a Taylor brace.

Only thirty cases have been reported, but he believes the condition not to

be rare, and that any case of lumbago following typhoid, especially if there be spasmodic pain or muscular spasm with a rise in temperature, should arouse the suspicion of typhoid spine. The prognosis for recovery is good, no case ever having come to autopsy. (H. E. D.)

The Mimicry of Gastric Troubles by Spinal Disease.—SIR FREDERIC TREVES (*Practitioner*, Jan., 1903) reports two cases of spinal disease in which all of the symptoms were referred to the epigastrium. One of these cases, sarcoma of the spine, was not diagnosed until after an operation for carcinoma of the stomach had been done, and then was accidentally found by the nurse. The other case was in a woman who had caries when a child. Experience has demonstrated that caries should be suspected in children who have persistent "bellyache" which resists treatment directed to the stomach. There was well-marked dilatation of the stomach in the cases which he reported, and this condition he believes is oftener due to "various ill-recognized nerve conditions" than to obstruction of the pylorus. (H. E. D.)

On Arthrodesis of the Joint in Paralytic Shoulder Luxations.—OSCAR VULPIUS (*Archiv. f. klin. Chirurgie*, No. 142, Vol. 69) considers the subject in a thorough article. He passes briefly over the etiology of the condition and then, citing six cases upon which he operated during the last four years, gives his method in detail.

Four of these cases have now been under observation for two years or more, and a surprisingly good functional result has been obtained in each.

He emphasizes the importance of operating before the paralysis has extended beyond the shoulder muscles. On the other hand, he warns against attacking the joint before all hope of the muscles regaining their power has been abandoned, allowing at least a year to elapse after beginning paralysis before proceeding to operative measures. Bony alkylosis is sought as a fibrous union is apt to stretch, thus defeating the purpose of the operation. Growth of the limb was not interfered with in his experience; in fact, the difference in length of the arms was lessened in time.

Seven illustrations are given, two of which are x-ray photographs.

(G. P. B.)

On the Etiology and Treatment of Paralysis in Pott's Disease.—H. TILLMANNS (*Archiv. f. klin. Chirurgie*, No. 1 and 2, Vol. 69) treats of the above condition at some length. After discussing in detail the factors which cause the paralysis, he takes up the treatment in full. He advises that every case be given the benefit of orthopedic measures for a reasonable time before it is subjected to operation. In selected cases, when the diagnosis is reasonably certain, he favors surgical interference earlier than has been customary heretofore.

The two routes chosen for reaching the seat of the disease,—i.e., first, the

lateral exposition of the vertebral body with the modifications advocated by various operators, and second, the resection of the vertebral arch by laminectomy—are then fully discussed and statistics are quoted under each method giving the results obtained by it.

The conclusions which the author draws from his investigations are that the results of operation have not been satisfactory.

When operation is decided upon resection of the vertebral arch should be practiced, in caries of the arch and in disease of the bodies when the process is no longer active.

Lateral exposition of the body, and especially the Costo-Transversectomy of Ménard, is preferable when the bodies of the vertebrae are actively carious. Finally the author gives detailed histories of eleven of his own cases.

(G. P. B.)

The Value of Prolonged and Uninterrupted Immobilization in Pott's Disease of the Spine.—V. P. GIBNEY (*Archives of Pediatrics*, December, 1902) declares that whatever the form of splinting used, whether it be brace or jacket, the principle should be as prolonged and as nearly as possible uninterrupted immobilization. For this purpose Gibney has found the plaster-of-paris jacket, very carefully modeled, the most satisfactory of splints. Some of his patients have worn but two jackets a year, and he reports one case in which a single jacket was worn for two and one-half years with a perfect cure.

The patient is treated as though for a broken back and during the course of the disease is never allowed to stand or sit without support for the spine.

(H. E. D.)

Caput Obstipum. An Intra-Uterine Pressure Deformity.— F. VÖLCKER (*Beiträge zur klin. Chirurgie*, xxxiii., 1, 1902) upholds the theory that congenital wry-neck is due to intra-uterine pressure, as is also the concomitant scoliotic deformity of the face and cranium. After discussing the various theories he mentions experiments for the purpose of producing this deformity performed by himself on animals, such as tearing the muscles, and sectioning the motor nerves. He was unable to obtain results by these procedures. He then details three of his own cases and one from literature, in which the wry-neck was certainly present in utero.

V. believes that when the head is held over for a sufficient length of time and enough pressure is exerted to interfere with the circulation on that side, the shortening of the muscles will take place with the pathological changes found in wry-neck. The severity of the deformity will depend on the grade of these factors, i.e., period and degree of ischemia. The acceptance of the theory of intrauterine pressure with consequent ischemia according to the author, satisfactorily explains the pathology of wry-neck.

Open section of the sterno-cleido-mastoid with redressement has, in the hands of the author, been very successful in correcting the condition. When the case is seen immediately after birth the same principles of massage, passive correction, etc., as in a recent ischemic muscle paralysis are recommended.

(G. P. B.)

On an Operative Procedure for the Correction of High-grade, Angular Deformity of the Leg.—MAX REINER (*Münch. med. Wochenschr.*, Dec. 9, 1902), after discussing the methods in vogue for the solution in continuity of long bones in these cases, explains an operation of his own whereby he believes the disadvantages of these are overcome.

Osteotomy he considers indicated: First, whenever the diaphysis is of great hardness—eburnation—independent of the grade of deformity; second, whatever the consistency of the diaphysis (a) in angular deformity or (b) where several solutions in continuity are required for correction.

His method is as follows: An incision is made to the bone on its concave side. The thickened periostium is then widely divided to prevent resistance to correction from this membrane. An osteotome is used to almost divide the bone, the remaining lamellae being fractured. Manual extension is now used, during which all tight bands or tendons are nicked or divided, after which the wound is closed and dressed. Screw extension is then applied, Lorenz's Hip Redresseur being the instrument of choice, and the limb is gradually forced into a position of over-correction to secure complete laxity of the soft tissues. The parts are allowed to resume the normal position and a snug plaster bandage is applied.

Among the advantages claimed for this method are:

First—Prolonged rest in bed with weight extension becomes unnecessary, as the screw extension has rendered muscular action nil, and the plaster dressing holds the part in the acquired position.

Second—Shortening, if present, after operation, is less than in other procedures, especially wedge-shaped osteotomy, as the longest line of bone is practically intact, i.e., that along the convex border.

Third—The screw extension does away with using the fractured ends as as a fulcrum for extending the soft tissues, and obviates the dangers of that procedure.

The author explains the immunity from danger of the blood vessels and nerves in this forcible extension, by the fact that the extending force is distributed over their entire length while that on the other soft tissues is limited to the leg. (G. P. B.)

The More Frequent Diseases of the Joints.—J. H. STOLPER (*Med. News*, Jan. 10, 1903) expresses regret upon the neglect of orthopedic treatment of joint diseases. He calls attention to the fact that but few colleges give any special instruction in this very important branch of surgery.

Arthritis may be due to, or follow any disease to which the general organism is susceptible. This being the case no routine method of treatment can be laid down. He believes that, aided by laboratory methods an exact diagnosis of the nature of the condition should be made, and treatment regulated accordingly. In general he taps the joint, flushes with alcohol, and follows with bichlorid solution 1-2000. This is repeated as often as indicated. In management of tuberculous joints, he argues against the more generally accepted non-operative procedures. A report of cases is included.

(H. E. D.)

Certain Principles and Methods in the Surgery of the Paralyses of Children.—ROBERT JONES (*Lancet*, Feb. 14, 1903) declares that in the past we have been too much influenced by the apparent pathology of paralysis. He suggests that the pathological findings may be largely secondary to the muscular desuetude. His results after orthopedic treatment do not justify the pessimism inspired by the writing of neurologists and medical men. He believes that two classes of these cases should be recognized,—those with absolutely paralyzed muscles, and those with partially paralyzed muscles, which have been useless only for the reason that posturally they have been impotent against gravity and large healthy muscles. If after painstaking examination he can discover the slightest action of the paralyzed muscle, he gives a favorable prognosis for a useful limb if treatment be sufficiently prolonged. The principle of his treatment of existing deformity, is the keeping of the joints in full or hyper-extension after all resistance from contractures is removed by freely tenotomizing. The attitude of correction should be maintained by suitable apparatus, the designing and application of which should no more be left to the brace-maker, than the drug treatment of a medical case should be left to the pharmacist. Interesting and carefully regulated exercises should be given the patient. Tendon transplantation in properly selected cases has been very satisfactory. Arthrodesis, he believes, should be more generally used in hopelessly flail-like joints. While the spastic cerebral type is more difficult to treat, measures directed along the same lines as in spinal paralytic cases, will bring startling results. Cases are cited. (H. E. D.)

DERMATOLOGY.

Louis F. Frank, M.D.

Mycosis Fungoides and its Treatment with Roentgen Rays.—W. A. JAMIESON (*British Journal of Dermatology*, Jan., 1903) reports two cases, the first case being a male, sixty-six years of age, on whose hands a few small nodules developed over the region of the wrist, later on the legs. A year ago the face was attacked, first showing a dry, scaly condition, then changing to hyperemia and oozing, attended by severe itching and burning. At this stage the patient lost almost all the hairs of the scalp. In the later months the skin was decidedly thickened, with partial loss of the epidermis causing profuse oozing. The treatment proved ineffective, and before death the patient developed insanity.

The second case was that of a woman, fifty-four years of age, in whom the affection began ten years ago with a hyperemic, itching macule on the neck, near the ear. This lesion was as large as a quarter. Within the last year, dark red, partially smooth, partially fissured, craterlike tumors, from the size of a pea to that of a walnut, developed on the face and on the neck. In the region of the sternum a few oozing, eczemalike, thickened patches were observed. This patient was treated with the Roentgen ray, the sittings lasting from three to five minutes. The effect of the treatment was a steady diminution in the size of the tumors. After several months, these and others which formed later and entirely disappeared and had not recurred up to date.

The Resorcin Treatment of Lupus Vulgaris and Tuberculosis Verrucosa Cutis.— MAX JOSEPH (*Med. Woche*, No. 21, 1903) says that Finsen's ideal results in lupus and tuberculosis of the skin are not equally uniform, two to three per cent. not being favorably affected. The length of the treatment and the expense connected with it are also objectionable to many patients.

For the past two and one-half years, Joseph has employed with the happiest results a form of treatment consisting in the application of a resorcin paste. The resorcin paste (Resorcin 3.0, Lanolin 4.0, Ung. simpl. 5.0, Vaselin 2.0) is applied on lint and renewed morning and evening. After twelve hours superficial necrosis sets in. After cleansing, the application of the paste is repeated for a period of from eight to ten days. Then an ointment of boric acid is applied. The pain is not severe. Healthy granulations appear, but if necessary the same procedure is repeated.

Vitiligo and Locomotor Ataxia.— P. RAMÉ (*Journal d. Practic.*, No. 10, 1902) says that vitiligo is one of the trophic disturbances which often accompany tabes dorsalis. It is often the first noticeable symptom of beginning tabes. In the case cited by Ramé vitiligo was observed four years before symptoms of locomotor ataxia were evident.

Effects of X-Ray.— KIENBOCK of Vienna (*Amer. X-Ray Journal*, January, 1903) in experimenting on pigeons with the x-ray, found that the effects on the skin were not immediate, but showed themselves after several days or weeks. Two weeks after the last exposure all the feathers of the back fell out, followed later by those of the breast, neck and cranium. The feathers of the wings, side and rump were only slightly affected. The downy feathers and the minute hairs of the skin were also lost.

HYGIENE AND PUBLIC HEALTH.

U. O. B. Wingate, M.D., W. C. Bennett, M.D.

Food Preservatives: Their Use and Abuse. WILLIS G. TUCKER, (*Medical Review of Reviews*, Feb. 25, 1903) gives some very rational ideas on this perplexing subject. He attempts with fair success to draw the line, which will indicate the preservatives that may with safety be used and to what extent. He deplores the fact that all new preservatives are tabooed when, as a matter of fact, some of them may be less injurious than the old and accepted ones, against which no complaint is ever heard.

The amount of preservative which will be ingested is, as a rule, more important than the mere fact that it is used at all; for instance, while the amount of salicylic acid present in catsup would be harmful if catsup were taken in as large quantities as many foods, it is not harmful in the quantities ordinarily used, since only about 1/40 grain of the acid is ingested.

At the same time he points out that those substances which prevent fermentation and decay, are also apt to act injuriously on the digestive ferments as well, and to sometimes render the preserved food less easy of digestion.

"Among the substances which have been employed during recent years for the preservation of food, may be named, boric acid and its sodium salt or borax, salicylic acid and its sodium salt, sulphurous acid and the sulphites and acid sulphites of sodium, potassium and calcium, beta-naphthol, formaldehyde, saccharine, the alkaline fluorids and boro-fluorids and silico-fluorids, pyroligneous acid and abrastol or asaprol."

He endorses the use of boric acid and borax in "cream and butter in amounts not exceeding one-quarter of one per cent. in the former, and one-half of one per cent. in the latter, expressed as boric acid," also as a dusting for hams and bacon "not exceeding one and one-half per cent. of the weight of the meat," but objects to the use of boric acid or any other preservative in milk to be used as food for infants or invalids.

Salicylic acid "in no greater quantity than one grain per pint in liquid foods or one grain per pound in solids," is permissible but should not be used in "wines, beers and other fermented liquors."

The use of *benzoic acid* is increasing and though "in many cases it may perhaps be used with advantage, its indiscriminate use ought not to be sanctioned."

Sulphurous acid, chiefly used as sulphites, is looked on with disfavor, partly because to be effective relatively large amounts must be used.

Formaldehyde. Its use in milk is emphatically forbidden.

Beta-naphthol. "Its addition to food articles ought not to be sanctioned."

Saccharin. Although its use in foods is prohibited in some countries, Tucker believes it should not be absolutely prohibited.

Fluorids have produced a number of cases of poisoning, some of which resulted fatally.

Pyroligneous Acid. Sold as "liquid smoke." Foods preserved by it should not be sold as "smoked."

Abrastol (Calcium salt of beta-naphthol-sulphonic acid). Should probably not be permitted as a preservative for foods.

"The Bureau of Chemistry of the U. S. Department of Agriculture is about beginning a series of experiments with a view to determining the direct effect upon health of the ingestion of chemical food preservatives, for which purpose Congress has appropriated $10,000." It is believed that these tests will be of considerable practical value and will form the basis of more rational and uniform laws than now exist. (W. C. B.)

Vaccination.— Now that we are beset on all sides with smallpox, it may be of quite general interest to follow out the essentials of an exhaustive study of the subject of vaccination. DR. THEOBALD SMITH and DR. EUGENE A. DARLING (*Medical Communications of the Massachusetts Medical Society*, Vol. XIX., No. 1, 1902) write such thorough treatises on this subject that we quote freely a number of excerpts from their articles.

(DR. THEOBALD SMITH): The preparation of animal vaccine is in itself simple enough, and this very simplicity is a source of danger, because the

production may be undertaken by such as are not sufficiently trained in scientific methods to apprehend and utilize the improvements wrought by investigation, as well as to anticipate and guard against the dangers due to altering conditions. In this regard it differs from the preparation of diphtheria antitoxin, because the latter substance cannot be prepared excepting by those having had considerable technical training. Its successful manufacture necessarily implies that degree of care which also ensures the safety of the product. * * * It is of considerable interest to note that vaccine dispensed by different institutes is not derived from one and the same stock. There are three sources available.

1. The virus descended from spontaneous cow-pox and continued through an indefinite series of animals—the true animal vaccine.

2. Virus obtained from animals which have been inoculated with lymph from human vaccine pustules, either directly, or indirectly through a series of calves. This is known as retro-vaccine.

3. Vaccine obtained by passing smallpox virus through the cow, the so-called variola-vaccine.

It would probably be impossible for many vaccine plants to trace the genealogy of their current stock back to its beginnings. In Germany the use of lymph from the arms of children (retro-vaccine) has been a favorite mode of rejuvenating impaired animal virus. * * * It has been known for some years that the fresh vaccine contains large numbers of bacteria. Up to 700,000 per c.c. have been found. When 50 to 70 per cent. glycerine is added, these bacteria are slowly destroyed. After one month the number is greatly reduced. After two or three months the vaccine may be regarded as sterile. In the meantime the vaccine virus remains intact up to six months after preparation, and even longer. * * * Of 41 points examined by Rosenau, an average of 4,807 bacteria per point was found. Of 51 tubes of glycerized virus an average of 2,865 bacteria per tube was found. His statement that the glycerized virus was too fresh when put upon the market seems warranted by his results, for a sufficient percentage of glycerine acting for four to six weeks should have reduced the number of bacteria below this level. The points, on the other hand, cannot be benefited by time, since the dried virus itself becomes uncertain after two months.

The micro-organisms we are now considering are largely harmless saprophytes. * * * About seven years ago the German commission undertook to determine what, if any relation existed between them and the severer forms of inflammation associated with vaccination. The outcome of prolonged studies of the effect of various vaccines was, that the contained bacteria had little or no effect upon the reaction. A bacteria-free vaccine might in one case produce extensive erysipelatous inflammation, while a vaccine containing many bacteria, among them so-called staphylococci, might have no effect whatever. The examination of excised portions of erysipelatous skin failed to reveal the anticipated streptococci. The cause of these variations was the individual susceptibility or idiosyncrasy of the child, which reacted alike to vaccine, whether sterile or containing numerous bacteria. * * * The possible contamination of vaccine with the spores of tetanus bacilli has created consternation among those who see in vaccination one of the greatest safeguards of a dense and constantly intermingling population. * * * But

the condition is so rare—practically unknown in Germany, the most thoroughly vaccinated nation—that a second thought and a consideration of the carefully collated cases, so far as obtainable, make the suspicion seem unfounded. The whole subject is so new that few data are at hand upon which to base any inference. Careful investigations will be necessary to determine to what extent, if at all, tetanus spores may germinate and multiply in the vaccinal eruptions of the cow, so that the conditions may hereafter be promptly met. If it should appear that vaccine may be responsible for tetanus, only some unusual accident or gross negligence will explain its rare occurrence. * * * The testing or examination for purity and efficiency of animal products used in medicine is a problem of considerable difficulty. * * *

There are two ways out of the difficulty. One has been in vogue on the Continent for many years. Each small state or each subdivision of a large state assumes the responsibility of preparing the vaccine itself. I fully realize that in our country such public institutes, without the safeguard of absolute divorce from practical politics, without the loyal, unselfish support of the medical profession, and without adequate financial support, would, in all probability, be a disappointment. But granting these conditions as attainable, the advantages would be very great. There would be possible a close contact between the people using the vaccine and the institution preparing it. Its efficiency and safety would be subject to a continuous control at close range not obtainable otherwise.

* * * According to the other alternative, the National government might appoint inspectors for the private vaccine plants, under whose supervision the virus is prepared, tested and officially stamped, just as all antitoxin sold in Germany is tested beforehand in large lots by government experts. The place where vaccine is tested most easily and economically, and where such testing would go hand in hand with a corresponding improvement of the product, is at the source—where it is made.

(DR. EUGENE A. DARLING): The best age for the primary vaccination of healthy children is between three and six months, i. e. after the child is well started in life and before it has begun the troublesome process of teething. In the case of delicate children, or of those suffering from some constitutional disease, the vaccination may be postponed at the discretion of the physician. Vaccination is contra-indicated when the child is suffering from any inflammatory skin disease, such as erysipelas, or eczema, or when it has recently been exposed to any acute infectious disease, such as scarlet fever, measles, mumps or whooping cough. In time of epidemic, or when there has been an actual exposure to smallpox, vaccination may be performed as early as the first week of life, or in the face of circumstances which would ordinarily contra-indicate it, but in individual cases the decision as to its advisability must be left to the judgment of the attending physician.

In most cases children who have been vaccinated in infancy cannot be revaccinated successfully until after a period of eight or ten years. In Germany, where the matter has been regulated with great care, the law requires vaccination in infancy and revaccination at the age of twelve. The almost complete immunity from smallpox which Germany has enjoyed since the enactment of this law is attributed largely to the compulsory revaccination, and it is reasonable, therefore, to recommend this practice. After two suc-

cessful vaccinations it is not necessary to repeat the operation except in times of epidemic, when universal revaccination should be insisted upon. * * * The physician should remember that the operation of vaccination, though insignificant in itself, demands the observance of the ordinary rules of surgical asepsis. The hands of the operator and the skin of the patient should be surgically clean, and only a clean sterile instrument should be used for scarification. With a little care it is possible to perform the operation without touching the skin of the patient with the fingers, and this source of infection may be entirely eliminated. The most convenient place for the insertion is the outer side of the upper arm. There is no objection to vaccination on the leg in the case of girls, where it is desirable to avoid disfigurement; but in this location the after treatment requires somewhat greater care to ensure protection and cleanliness. The skin of the patient should be washed thoroughly with soap and water, and afterwards with alcohol or ether, with enough friction to cause some reddening. This removes the superficial layer of the epidermis and dilates the cutaneous vessels, thus aiding in the absorption of the lymph. If there is any hair it is well to shave a small area, but this is rarely necessary. Antiseptics as a rule are not required. For the scarification the best instrument is an ordinary needle, which should be sterilized just before use by heating in an alcohol or Bunsen flame. The lymph may be placed on the skin first, the scarification done through it, or the skin may first be scratched and the lymph then well rubbed and pricked in, the needle being used for this purpose. It is better to make three or four small insertions than one large one. A scarification no larger than an eighth of an inch in diameter will produce a vesicle and cicatrix from one-quarter to one-half an inch in diameter. When several insertions are made they should be at least an inch apart. If placed too near one another they are liable to coalesce and form a single large vesicle, which is much more likely to be injured than several small ones. * * * The arm should preferably be left bare until the lymph has become dry. If glycerinated lymph has been used, this may take a considerable time—an hour or more—and in office practice this may cause much inconvenience. When this long wait is impracticable, it is permissible to use a shield for temporary protection. The best shield for this purpose is one of the light linen or paper forms, porous or perforated, and stiff enough to resist crushing. This may be held in place by two or three small strips of plaster. The shield may be left on for a few hours, and should then invariably be removed. * * * A very comfortable dressing may be made by using two square pads of folded gauze, one three inches in diameter and the other a little smaller. The larger one has a hole cut in its center, large enough to include the vesicles, and is held in place by two strips of zinc oxide plaster. The smaller pad is then pinned on so as to form a lid over the hole. This dressing has the advantage of permitting the inspection of the vesicles without disturbing it. If the vesicles break down and suppurate, they should be washed daily with boiled water or a mild antiseptic, and kept bandaged with sterilized gauze. If the itching is intolerable, a little aristol or some other mildly antiseptic powder may be dusted on. Occasionally a scab forms having a few drops of pus under it and some edematous granulations. Such a scab should be carefully removed, and the granulations should be cut off with a pair of flat-curved scissors. This pro-

ceeding is entirely painless, and leaves a clean, healthy surface, which usually heals rapidly under mild antiseptic treatment.

Shields as permanent dressings are to be condemned without exception. The transparent celluloid ones, which have been used so widely of late, are especially bad. * * * The physicians should always give detailed instructions to the patient, or, if the latter is a child, to the parents or nurse. * * * The responsibility resting upon the physician in this matter is not a light one. If mishaps occur he is always blamed, whether justly or not. The sources of danger, * * * are not entirely under his control, but it is his duty, as well as his interest, to observe every precaution which will minimize the danger of vaccination, and yet afford his patients that immunity from smallpox which is one of the greatest blessings conferred on mankind by the art of medicine. (U. O. B. W.)

VITAL STATISTICS.

(From the Monthly Report of the Health Department of the City of Milwaukee.)

SUMMARY OF STATISTICS OF DEATHS, BIRTHS, CONTAGIOUS DISEASES, ETC., FOR FEBRUARY, 1903.

Number of deaths	409
Number of births reported	574
Number of marriages reported	199
Number of still births	21
Number of bodies brought to city for burial	28
Total number burial permits issued	458
Number of deaths investigated by Department	21
Number of deaths reported by Coroner	26
Cases of smallpox reported	20
Cases of tuberculosis reported	4
Cases of diphtheria reported	39
Cases of scarlet fever reported	17
Cases of typhoid fever reported	13
Cases of measles reported	2
Cases admitted to City Isolation Hospitals	30
Permits for cremation	2

COMPARATIVE MORTALITY.

For Month of February, 1903, and deaths from 7 Principal Zymotic Diseases as taken from Official Reports:

City.	Population.	Deaths.	Annual Death Rate.	Small Pox.	Diphtheria.	Scarlet Fever.	Measles.	Typhoid Fever.	Diarrhoeal Diseases.	Tubercular Diseases.
New York	3,732,903	5,957	20.72	—	179.	72	44	42.	111.	840.
Chicago	1,885,000	2,570	18.30	11	50.	33	21	54.	97.	242.
Philadelphia	1,349,712	2,395	22 77	11	59.	12	7	93.	90.	271.
Baltimore	533,000	863	21.02	—	17.	1	21.	7.	11.	104.
Cleveland	420,000	549	17.00	8	16.	1	1	23.	21.	46.
Buffalo	380,000	474	16.21	—	8.	2	3	14.	17.	46.
Milwaukee	315,000	409	16.88	—	4.	—	—	6.	9.	42.
New Orleans	310,000	521	21.84	—	5.	1	—	4.	23.	85.

W. C. BENNETT, M.D.,
Registrar Vital Statistics.

REPORT OF WISCONSIN BOARD OF MEDICAL EXAMINERS.

Following is a report of the examination held at Milwaukee, Jan. 13, 14, 15, 1903:

Name of College.	No. of Applicants.	Passed.	Failed.
Rush Medical College	3	2	1
University of Oregon	1	1	..
Johns Hopkins University	1	1	..
Illinois Med. College	1	..	1
Northwestern Univ., Chicago	1	1	..
Am. School of Osteopathy	1	1	..
National Med. College, Chicago	1	1	..
Hamline Univ., Med. Dept	1	1	..
College of Phys. and Surg., Chicago	2	2	..
Hahnemann Med. College, Chicago	1	1	..
Univ. of Michigan	1	1	..
Wis. College of Phys. and Surg	1	*1	..
Total	15	13	2

*On diploma.

THE WISCONSIN
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MAY, 1903

HOOK-WORM DISEASE AND ITS ROLE AMONG THE DISEASES OF AMERICA.*

By J. A. CAPPS, M.D.

INSTRUCTOR IN MEDICINE, RUSH MEDICAL COLLEGE; ASSISTANT PHYSICIAN, PRESBYTERIAN HOSPITAL, CHICAGO.

During the last decade a new disease has made its appearance upon the American continent. At first, each succeeding year brought to light one or two straggling cases; then a dozen; and now the number runs into the scores.

A few victims came from other lands, but the great majority are natives who have never left this country. This epidemic, therefore, does not owe its origin so much to the introduction of a foreign plague as to the discovery that in our midst there now exists, and probably has existed for generations, a parasitic disease which we supposed was confined to the old world. Even now we are only beginning to open our eyes, for scarcely a hundred cases have been recognized, although competent observers believe that uncinariasis or hook-worm disease in the southern states is as widespread and as serious in its consequences as malaria or tuberculosis. Thousands of ill-nourished, anemic people known as "poor white trash" or as "clay eaters" are victims of hook-worm and doubtless owe their ill-health in large part to this infection.

This startling discovery in the Western Hemisphere finds a striking analogy in the annals of the disease in the Old World. The parasite Uncinaria (ankylostoma) was discovered in 1838 by Dubini of Milan. In 1854 came the first suspicion in the mind of Griesinger that the "Egyptian chlorosis," a widespread scourge that had baffled

*Read before the Milwaukee Medical Society, March 23, 1903.

the understanding of centuries, was caused by this parasite. It remained for Wucherer in 1872 to demonstrate this hypothesis as a fact.

In 1877 Grassi found that the "brickmakers' anemia" long known in Italy to be of an epidemic nature, was a form of uncinariasis. From the brickyards of Italy the Italian laborers are supposed to have carried the infection to the St. Gotthard tunnel and caused there the disastrous outbreak of 1880.

Since then the hook-worms have been observed in nearly all European countries, in Japan, Asia, Australia, India, South America and the United States. Among the names given to the disease are brickmakers' disease, geophagia, cachexia Africana, tunnel disease, miners' disease, mal d'estomac, ankylostomiasis, and more recently, the designation which is perhaps preferable, uncinariasis or hook-worm disease.

Of especial interest is the appearance of the malady in our own country. Clinical descriptions of the disease have been given by Chabert in Louisiana (1820), Duncan in Alabama (1849), and Lyell in Georgia (1849). Herff also describes a case in Texas seen in 1864, where worms resembling uncinaria were found in the duodenum. Belfield was one of the first to identify the hook-worm in America. His specimens were taken from the intestines of cats dying of anemia. They were sent to him by Dr. Gelbach of Mendota, Ill.

SUMMARY OF CASE.

Before discussing the general nature of the disease, I will briefly describe a case that I observed last October in the Cook County hospital, and through the courtesy of Dr. James B. Herrick, was enabled to report.

Previous History.—G. L., 52 years of age, was a carpenter by occupation and a native of the United States. There was nothing in the family history of any significance. He enjoyed excellent health until the year 1879, when he went to Panama to work at his trade. While there he suffered from repeated attacks of malaria of both quotidian and tertian types.

Two years ago the patient was first taken ill with sudden gastro-enteric symptoms. At that time he was employed on the Chagres River, where he handled lumber and logs that were often covered with mud. He recalls that he frequently sat down to luncheon without previously having washed his hands. The earliest complaints were of an aching pain in the upper belly, loss of appetite and weakness. There was no nausea nor vomiting. The bowels were irregular, at one time loose, at another constipated. Later he became short of breath and dizzy from any unusual exertion and had palpitation of the heart.

In January, 1901, he sailed from Panama to New Orleans, where he was in a hospital under treatment for 15 months. There the anemia was so pro-

nounced and so intractable to iron and arsenic that the diagnosis of pernicious anemia was made.

April, 1902, he went to Iowa, but the anemia progressed steadily until he was too weak to move about. .

September 9, he was admitted to the Cook County Hospital, complaining chiefly of pains in the belly, weakness, dyspnea and palpitation. After sitting or standing the feet would swell. Frequently he had spells of dizziness and faintness. Patient says that he would occasionally develop a moderate fever and at such a time the epigastric pain was worse. The appetite was poor. The bowels required a laxative. There was never any hemorrhage from the nose, intestine or skin. Vision was good. A gradual moderate loss of flesh had taken place.

Status Presens.—Man of medium build; skin of a lemon-yellow color. Fatty layer fairly well preserved. Sclerotics bluish and muddy. Lips and mucous membranes almost bloodless. Palpable arteries moderately thickened. Pulse of large volume, soft and compressible, low tension, with a decided water-hammer character. Lungs negative.

Heart dullness extended to the left nipple line, to the upper border of the third rib above, and to the right edge of the sternum. The impulse was forcible and diffuse. Over the apex was a systolic blow transmitted to the anterior axillary line. A louder bruit of a different pitch was audible over the mitral area and the base. The pulmonic second sound was louder than the aortic closure.

The spleen was not palpable though its area of dulness was enlarged. The liver was not felt. The epigastric and umbilical regions were tender to pressure. Knee-jerks present, but not prompt.

Temperature 98.6, pulse 90, respiration 20. Urine 1.015—no albumin—no sugar and no casts.

September 11, blood examination showed hemoglobin 18 per cent., reds 2,576,000, whites 6,600. No stained preparations were made.

September 15, gastric contents were expressed one hour after a test meal of tea and toast. No free HCl present, no lactic acid.

October 20, blood examination, hemoglobin 12.5 per cent.; reds, 843,000; hematocrit, 980,000; whites, 4,500; color index, .80; volume index, 1.17. The differential count showed: small mononuclear, 10 per cent.; large mononuclear, 11 per cent.; polymorph. neutrophile, 66 per cent.; polymorph. eosinophiles, 13 per cent.; no rouleaux formation; no nucleated red cells; poikilocytosis marked; polychromatophilia marked.

The presence of pronounced eosinophilia in a case of grave anemia made us strongly suspect the existence of an intestinal parasite so that the stools were examined frequently. The earlier specimens of feces were watery from the rectal injections employed and were therefore not easily studied. In a formed movement, however, the ova were found in large numbers. These eggs corresponded accurately in dimensions to those of *Uncinaria duodenalis*, measuring about 56 microns in length and 34 microns in width.

Subsequently the eggs of *Tricocephalus dispar* were found in small number. Charcot-Leyden crystals were present in some preparations. Cover-glass smears of feces hardened in alcohol and ether were stained with hematoxylon and eosin and eosinophilic granulations demonstrated. These granulations,

like the Charcot crystals, were never numerous as is so often the case in uncinariasis.

The eggs were successfully cultivated and the larvæ brought to mature development.

November 6, examination of the blood gave:

Hemoglobin 11 per cent.; reds, 748,000; hematocrit, 915,000; whites, 5,600; color index, 88 per cent.; volume index, 122 per cent. Poikilocytosis and polychromatophilia marked. Coagulation time, 5 minutes.

Previous to this examination the patient had taken thymol in small doses and it is not unlikely that many parasites were swept away and lost in the stools. The diminished eosinophilia and the smaller number of eggs found in the stools thereafter lent support to this assumption.

History in Hospital.—Treatment on the whole was unsatisfactory because of the profound weakness of the patient and the irritable condition of the stomach. A persistent nausea set in that interfered with stomach feeding and made the administration of thymol ineffective and even hazardous. Nutrient and salt enemata were resorted to, but the vomiting persisted until the patient succumbed on November 13..

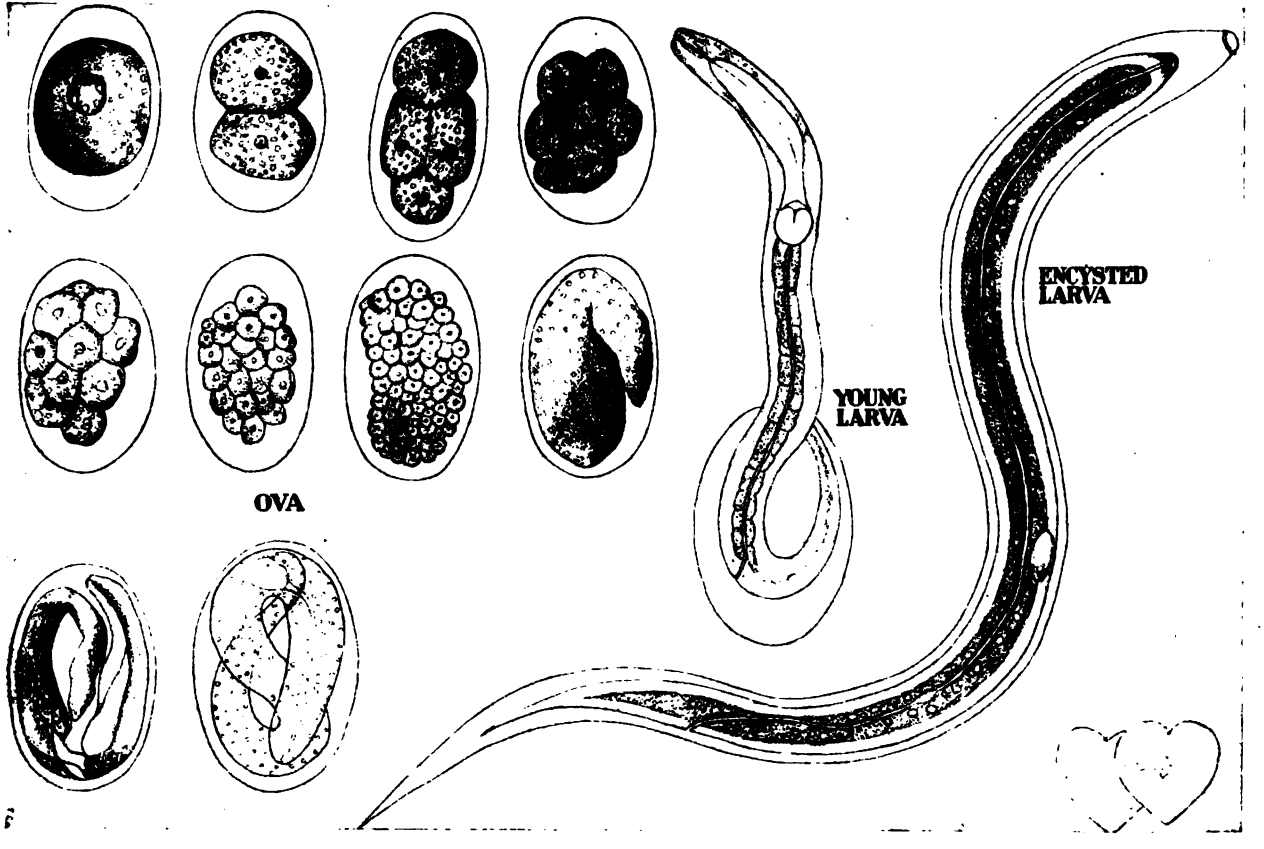
During his stay in the hospital the most conspicuous symptom was epigastric pain of a dull nature at first, subsequently colicky. In the last two weeks this pain became continuous and was accompanied by great tenderness over the epigastric and right hypochondriac regions. The liver mass extended at this time about 2 inches below the costal arch and the tenderness on pressure was as great as that seen in hepatic abscess.

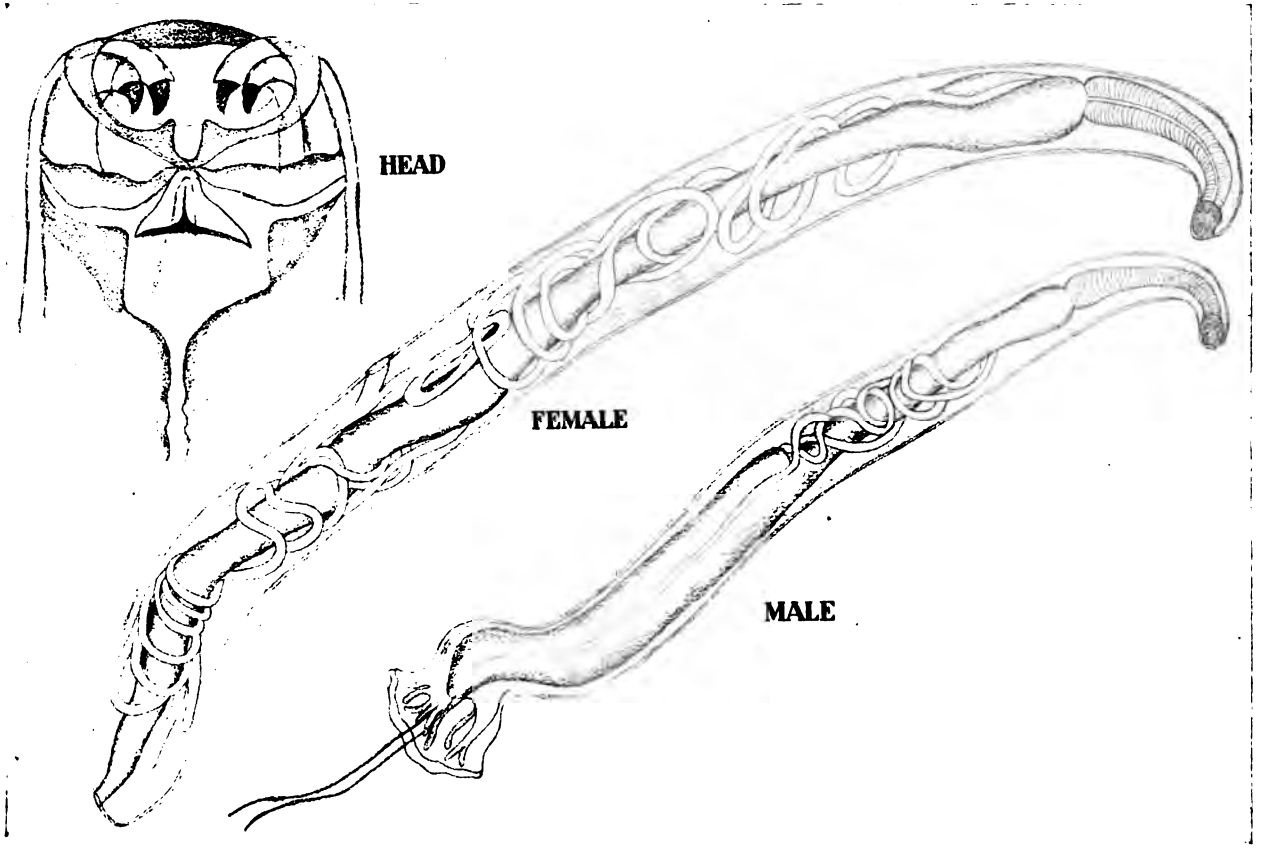
The bowels, as a rule, were constipated and required rectal enemata. The temperature was usually normal and ranged between 98.5 and 99.5 F. A tendency to hemorrhage was nowhere to be seen except from the intestinal tract. The feces gave the Prussian blue reaction for iron.

The examination of the eye grounds was twice carried out under difficulties. No retinal hemorrhage was apparent.

The blood findings throughout were of a most suggestive nature. An anemia at first of the secondary type, progressing until it corresponded in most respects to a primary pernicious anemia. The individual corpuscles grew larger and held an ever increasing amount of hemoglobin, the color index rising from 38 to 88 per cent. and the volume index reaching 122 per cent. The poikilocytosis was sufficiently outspoken, as well as the polychromatophilia, for a primary anemia. The scarcity of nucleated red corpuscles and the entire absence of megaloblasts is unusual in primary pernicious anemia, yet some such cases have been reported. What convinced us that the anemia was not of the usual primary type was the eosinophilia of 13 per cent., for in the primary disease the eosinophiles are rarely increased. On the other hand, the uncinariæ and most of the other intestinal parasites are characterized by an increase in the eosinophilic cells.

Anatomic Diagnosis—Postmortem. 1. Uncinaria duodenalis of small intestine. 2. Ecchymosis of intestinal mucosa and hemorrhage into intestinal lumen. 3. General anemia and edema of dependent portions of body. 4. Bilateral hydrothorax. 5. Hydropericardium. 6. Edema of lungs and caseious tuberculosis of lower left lobe. 7. Slight atheroma of aorta. 8. Fatty degeneration of heart and liver. 9. Passive congestion and fatty degeneration of liver. 10. Chronic interstitial splenitis.


OVA
YOUNG LARVA
ENCYSTED LARVA


HEAD
FEMALE
MALE

PREVALENCE IN THE PHILIPPINES AND WEST INDIES.

Our army surgeons report that hook-worms are frequently found post-mortem in the Philippines.

Guiteras last year observed 8 cases in Cuba and believes that it is a common affection.

Ashford states that Porto Rico is a hotbed of uncinariasis. He found the ova of uncinaria in 19 out of 20 cases of so-called "tropical anemia."

EXISTENCE IN CENTRAL AMERICA AND MEXICO.

Many cases recognized in the United States came from Mexico. My own case shows that Panama is also a focus of the disease.

DISTRIBUTION IN THE UNITED STATES.

In all there have been 51 cases reported, exclusive of Stiles' yet unpublished cases. A glance will show that the seaboard states have suffered most. New York leads the Atlantic coast group with 10 cases; then comes Pennsylvania with 5; Maryland with 3; Virginia with 2 and the District of Columbia with 1. Georgia exhibits the largest number in the south (14), Texas follows with 9 cases. Louisiana has but 1. California claims three cases on the Pacific coast. The inland states are represented by Missouri (2) and Illinois (1) alone, and it should be emphasized that in the two states last named the disease was imported in every instance.

A more important inquiry concerns the localizing of the regions in this country where the disease is endemic. With the exception of 3 cases originating in New York and 2 in Virginia, the infected areas are situated in the states adjoining the Gulf of Mexico, viz.: Georgia, Texas, Alabama, Florida and Louisiana.

This fact becomes significant when it is stated that of the imported cases nine came from Porto Rico, four from Mexico and one each from Panama and Brazil. The Philippines contributed two cases, Italy three, Switzerland and Germany one each.

The prevalence of uncinariasis in the southern states and in the West Indies is far greater than the published cases would indicate. Stiles recently made a trip from Washington, D. C., to Florida, and made observations on this disease in the mines, brickyards, plantations, farms, cotton mills and asylums. He found uncinariasis to be a much more common cause of anemia than malaria. Since his final report is not yet published we cannot use the great mass of

material he collected. Suffice it to say that he found and identified scores of cases.

DEVELOPMENT OF PARASITE.

The hook-worm of the new world is somewhat different from the old world type, hence the name *Uncinaria Americana* (Stiles), as distinguished from *Uncinaria Duodenalis*, the species prevaling in Europe.

These worms are about ¾ in. long; they inhabit the small intestine and live by sucking blood. It is estimated that each worm sucks up more than a drop of blood daily so that the degree of anemia depends on the number of parasites present. Moreover they injure the tissues and set up hemorrhages.

The parasite has three stages of development: egg, larva, and mature worm.

The eggs are found in the feces usually in large number. They are very characteristic, show segmentation and afford a reliable means of diagnosis. The eggs do not hatch without air, therefore the feces must be exposed for 24 hours or more before the larvæ develop. The embryo shows great activity, sucks up nourishment and in eight days is full grown. Then the larva is encysted and quiescent, waiting for a human host. Infection is nearly always traceable to the larva, which attaches itself to the intestinal wall and develops into a mature worm. Five weeks after infection the worm is mature.

The shortest possible time necessary for the completion of the cycle of development,—from the eggs through the larval state outside the body, through the sexual ripening within the body, to the production of eggs again,—is from five to eight weeks. But this period is usually much longer because of the indefinite duration of the parasite in the larval stage.

MANNER OF INFECTION.

Man may be infected by swallowing the worms themselves, but the ordinary method is by ingesting the larvæ which in the encysted form can live in the soil for years. The victim carries the larvæ to the mouth with food contaminated by the soiled hands, or uses infected drinking water.

In one drop of mud there may be dozens of embryos, so that a few exposures of this nature are enough to produce a severe infection. The "clay-eaters" cannot hope to escape the disease.

Loos has experimentally proven that the larvæ may enter the

body through injured epidermis. Bentley claims that the "ground itch" of coolies is caused by the invasion of uncinaria larvæ into the skin.

It becomes evident, therefore, that the contamination of soil with feces containing hook-worm eggs is a great source of danger to those who work in the soil or who drink water coming from the immediate vicinity. In tunnels or mines where drainage is difficult, one subject may soon produce an epidemic.

RELATION OF SOIL TO UNCINARIASIS.

Stiles has observed that hook-worm disease flourishes best in the sand regions and in explanation advances these reasons:

(a) The eggs obtain more oxygen in sand than in clay and therefore develop more certainly into larvæ.

(b) The soil being very pervious easily drains the larvæ into drinking wells.

(c) The sand allows the larvæ underneath to be easily brought to the surface and thereby promotes hand-to-mouth infection among playing children or the farmers.

The cities are freer from the disease than the country, because of better drainage and sewage.

ANIMAL EXPERIMENTS.

Many animals are afflicted with a parasite that belongs to the genus uncinaria, notably dogs, cats and sheep. We have no evidence that the hook-worm of lower animals ever infects man. To determine whether animals are susceptible to the hook-worms of human beings, I carried out this experiment. Two cats were fed with milk containing cultures of active larvæ of the uncinaria duodenalis. Examination of the stools two months later showed no eggs of the hook-worm. One cat died in ten weeks, the other in four months. In the intestine of one were several round worms, but no hook-worms were found in either.

SYMPTOMS.

The symptoms depend entirely upon the severity of infection. When a patient harbors a few parasites he may complain of nothing; when a considerable number, he presents a picture of a chronic anemia; when a very large number, the gastro-intestinal symptoms may predominate and death take place.

Among the dirt-eaters of the south the subject is usually stunted

in growth, complains of indigestion, is "pot-bellied," and has all the symptoms of anemia in varying degrees.

The scattered cases in the north often resemble pernicious anemia.

PROGNOSIS.

The ravages of hook-worm disease are not indicated by the death rate. Like malaria it undermines the constitution and destroys health more often than it kills. What influence such a widespread disease exerts upon a community economically as well as physically can only be imagined. That it makes men and women lazy, that it causes physical degeneracy, that it checks moral and mental growth can not be doubted. Moreover the victim of uncinariasis falls easy prey to other diseases, such as tuberculosis and pneumonia.

A natural cure from an initial infection is very slow, for the worms may live five to ten years.

DIAGNOSIS.

The *locality* and the *occupation* of an individual are important considerations. Farmers in the sandy regions, workmen in brickyards, tunnels and mines, and children who play in the dirt in contaminated localities are the chief sufferers.

Anemia is the most common and suggestive symptom, especially when not satisfactorily explained by some other disease.

The *blood findings* in the milder cases are those of a secondary anemia, both the hemoglobin and the red corpuscles undergoing a diminution. When, however, the infection is more pronounced and the blood count falls to 1,000,000 or less, the type changes—we have a relatively high hemoglobin content and the erythrocytes are larger than normal. Poikilocytosis is present and nucleated red corpuscles may be found. Such a blood picture is essentially the same as that of pernicious anemia. Yet one usually finds a characteristic condition not belonging to pernicious anemia, viz., *eosinophilia*. The eosinophilia varies from three to thirty per cent. and is directly due to a chemotactic influence of the worms, for the eosinophiles disappear when the worms are expelled.

The only absolute sign of uncinariasis is the detection of *eggs* in the feces. Once seen they are easy of recognition. Care should be taken not to mistake for uncinaria the eggs of Ascaris lumbricoides which have a thick capsule, or the elliptical ova of Trichocephalus dispar. The Oxyuris vermicularis eggs are nearly always hatched out before ejection and are flattened at the ends.

TREATMENT.

The individual can be promised a cure unless the disease is in a late stage. It is well to first clear the intestine with a brisk laxative and deprive the patient of food for twelve hours. Then thymol is given in a two-gram dose and repeated in two hours. This is followed by a saline cathartic. The thymol may be administered in powder or in emulsion, but alcohol must be carefully avoided to prevent poisoning from too rapid absorption.

Anthelmintics must be repeated if eggs persist in the feces.

PREVENTION.

The people living in the affected districts should be instructed concerning the danger of the dejections. Good sewage and a pure water supply are necessary. They should never eat without first washing the hands.

THE PANAMA PROBLEM.

My own case, though the only one so far reported from Panama, shows that the hook-worm disease has a foothold in the region of the canal. In view of this fact our Government cannot use too great precaution in the prevention of an epidemic among the 40,000 workmen who will soon begin operations. The best means of prevention in my opinion are:

(1) The examination of every laborer for the ova before he is allowed to work.

(2) The detention of every infected individual until he is cured.

(3) A supply of drinking water obtained at a safe distance from the canal.

(4) Drainage and drying of a strip of land on both sides of the canal.

(5) Proper disposal of dejecta by burning or disinfectants.

(6) Enforcement of washing the hands before eating.

PERFORATION OF TYPHOID ULCER. PULMONARY TUBERCULOSIS. UREMIC COMA AND PNEUMONIA.*

By H. A. HARE, M.D.,

PROFESSOR OF THERAPEUTICS AND PHYSICIAN TO THE HOSPITAL OF THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

The cases which I wish to show you today all possess unusual interest because they illustrate interesting points in the manifestation and diagnosis of disease.

The first patient is a man of middle age, a laborer by occupation, who entered the ward yesterday morning with a pulse-rate of 72 and a temperature of 100°. He stated that he had been ailing more or less for a period of three weeks; that during this time he had on several occasions attempted to return to work but had been forced to quit on each occasion by the development of severe abdominal pain which was localized chiefly in the neighborhood of his appendix. His tongue, when he was admitted, was very slightly coated; his pulse was not only normal in rate but good in quality; his intellect was perfectly clear, and there was no restlessness. Aside from the fact that he had some diffuse and moderate tenderness over the belly, which pain was slightly accentuated in the neighborhood of his appendix, there was nothing about him for several hours after admission which would lead us to suspect anything more than a mild influenzal affection, with perhaps some catarrhal irritation of the caput coli. At midnight, about 15 hours after his admission to the hospital, he was suddenly seized with violent abdominal pain, his belly became somewhat tympanitic, his pulse-rate markedly increased, and his temperature rose several degrees in the course of two or three hours. Careful examination of the patient during my absence convinced the resident physician and Dr. Francis Stewart, one of the assistant surgeons to the hospital, that a perforation of the bowel had taken place, and an operation was promptly performed. On opening the abdominal cavity, gas and fluid escaped; the seat of the perforation was surrounded to some extent by an exudation of lymph, which makes us believe that the perforation did not occur after his admission to the hospital, but must have taken place earlier than this, the symptoms apparently being quiescent until Nature, finding itself unable to prevent the spread of the infection, reacted and produced the pain and fever already described. Immediately after the operation the temperature fell almost to normal, where it has since remained. His pulse-rate also dropped to about 90 and his general condition became exceedingly good, and this is his state to-day, about twelve hours after the operation was performed.

*Part of a Medical Clinic at the Jefferson Medical College Hospital.

It is, of course, too early yet to determine whether the operation is to be put down as a success so far as cure is concerned; but the point of interest to us, as medical men, is that the operation showed the patient to be suffering from typhoid fever, and that it was a typhoid ulcer which had perforated the ileum about six inches from the ileo-cecal valve. The brief period during which the patient was in the hospital before the development of acute symptoms made it impossible for us to make the various tests which are usually employed when we are desirous of separating appendicitis, in its early stages, from typhoid fever. This case, therefore, illustrates several interesting points in differential diagnosis. First, the differentiation of appendicular disease from typhoid infection; second, the possibility of typhoid ulceration in the caput coli, producing so much tenderness on palpation in the iliac fossa as to closely resemble appendicitis; and again it is an interesting fact that this patient, manifestly a case of walking typhoid fever until the end of his third week, should have been in such excellent condition on admission to the hospital, with a pulse-rate which was entirely normal.

The second case is also of interest in this connection. The patient is a young colored girl of 14, sent to the hospital by a practitioner, who reported that she was suffering from typhoid fever, while in reality she is suffering from pulmonary tuberculosis. The instant that you listen to the chest you notice that at the right apex of the lung she has quite a large cavity which gives you cavernous breathing, with large and moist râles, pectoriloquy and an almost tympanitic percussion note. At the left apex there is an early consolidation with impaired resonance, and a few moist râles. When the patient's right hand is placed on top of her head so as to lift the lower border of the scapula and so uncover the septum between the upper and middle lobes posteriorly on the right side, we find that the infection of the right apex has also resulted in the development of a tubercular lesion at this septum. Auscultation reveals bronchial breathing and fine moist râles.

The possibility of tubercular infection existing in this area is one which you should always remember when examining obscure cases, since if you do not remember it, you will often overlook early tubercular lesions, the discovery of which is most important to your patient's welfare and your professional reputation. The case also illustrates the fact that the mere study of the temperature, pulse-rate and general appearance of a patient does not justify a practitioner in reaching a diagnosis of typhoid fever until after he has excluded the possibility of the disturbance being due to some other infection.

The third case is that of a woman who was brought to the hospital forty hours ago in a condition of coma and collapse. After active stimulation under the direction of the resident physician, she partly recovered consciousness, and when I saw her an hour later was semi-delirious and almost uncontrollable; her face was deeply flushed and the resident reported that on admission she had been distinctly cyanotic; her mouth was foul from sordes, and she had a severe cough. Auscultation of her chest revealed on one side large coarse râles, and percussion showed consolidation. She evidently, therefore, was suffering from pneumonia. Something about the general appearance of the patient convinced me, however, that a pneumonia was not the only difficulty from which she was suffering, and I expressed the opinion that in all probability she was uremic, and that the pneumonia was simply superimposed upon her renal disease. As her urine was passed involuntarily, some of it had to be obtained by catheter, and was found to contain one-fifth of a moist layer of albumin and numerous granular casts. An estimation of the urea, however, showed that it contained over 3 per cent. This comparatively high quantity of urea does not, however, indicate that the eliminative power of the kidney is maintained, since if an estimation were made of the total elimination in 24 hours, it might fall far below this. In addition to the symptoms already described, she had some lead-pipe spastic contraction of her limbs. The woman was at once put in a hot pack in which she sweat very profusely, and in a very short time her mind became practically entirely clear; her pulse improved and her cyanosis diminished, and her respiration also underwent marked improvement. Before the pack she was breathing 64 times a minute; after it, only about 44 times a minute. Last evening she was ordered another hot pack as her respirations seemed to have a tendency to become rapid, and to-day they are but 28. The patient can make intelligent replies when questions are addressed to her, but is still somewhat wandering when left alone, continually calling for water, of which she gets large quantities, but no quantity of fluid seems to satisfy her. This intense thirst, of course, raised the possibility of her also suffering from diabetes mellitus, but a urinary examination reveals no trace of sugar.

This case also illustrates the necessity of not jumping to a conclusion in regard to a diagnosis, and the need of remembering that acute maladies often complicate chronic ones, the chronic malady being the more important element of the two. If we are simply satisfied in diagnosing the acute condition without recognizing its underlying cause, our treatment must in a large number of instances prove futile.

PETIT MAL.

By ARTHUR J. PATEK, A.B., M.D., Milwaukee.

It is unnecessary to go into a lengthy dissertation on the subject of major epilepsy, for this is a disease the clinical picture of which —with its cry, its convulsive seizure and post-convulsive state with attending symptoms—is very familiar to all. It is to the less frequent form of epileptic seizure that I wish to call attention—so-called minor epilepsy (petit mal). Three such rudimentary forms of epilepsy having come under my observation recently, I consider the report of these cases not without some interest.

Case I concerns an unmarried lady, aged 40. She has never been of sound mind, and while able to perform household duties with neatness, her mental development has lacked much that would make her a useful member of society. Her parents, brothers and sisters are all very intelligent, and it is quite likely that her condition of mental deterioration may be attributed to the cause as assigned by her mother—an accident during birth. Until she was about five years old she had occasional epileptic fits. There was no recurrence of these until about ten years ago, when, from unknown causes, there was one attack; another occurred in September. Her mother informed me, that, chancing to pass her daughter's room a short time previously, she saw her standing beside the bed motionless, and staring vacantly before her. Being unsuccessful in an attempt to rouse her, she procured assistance and put her to bed. When called shortly after, I found the patient in a semi-stuporous state; she responded slowly to the command to put out the tongue and open the eyes. The tongue deviated slightly to the left, the pupils were equal and small, and the eyes were rolled upward; sensation was apparently normal throughout, and there was no motor disturbance; pulse, respiration and temperature were normal; the limbs were relaxed, but as soon as an attempt to bend a member was made it would become rigid and resistance to motion was offered. I inquired into all possible causes and could learn only, that on the previous evening the lady's brother had jokingly forced upon her several dishes of ice cream. I was not clear as to the nature of the attack, but thought that it partook of the nature of hysteria. Returning to the house at noon, I found the patient in about the same condition: the bowels had moved freely (calomel and enemata had been ordered), but otherwise there had been no change. While we were standing beside the bed, suddenly she opened her eyes wide, her face began to twitch, then her arms, then a low cry was heard, bloody froth appeared at the mouth, and in a moment I saw the patient in general convulsions—a typical epileptic seizure. This was followed by deep stertorous breathing, and a state of unconsciousness that lasted an hour. At evening she had quite re-

covered. Bromides were given for three weeks and there has thus far been no recurrence. It was not until after this attack that I was informed of the previous history. Had I known of the epileptic attacks during childhood it is probable that my attention would have been called to this in making the diagnosis.

The explanation I have to offer is the following: the primary attack during which the patient stood motionless (how long before being discovered is not known) and remained in a semi-stupor several hours, was without a doubt an attack of rudimentary epilepsy (petit mal), broadening out later into a typical epileptic convulsion. When we ask for the cause of an outbreak of this character in an adult who, barring a single attack ten years ago, had been absolutely free from such attacks or anything resembling them for thirty-five years, we find it difficult to give a satisfactory answer. It is, of course, possible that the epilepsy of her early years intends to reassert itself, though I consider this unlikely; she was laboring under no mental excitement or emotion, indeed she lives a very steady, unemotional existence. The one explanation I can give is that this sudden outbreak was induced by an auto-intoxication of intestinal origin, and due to an indigestion resulting from the large quantity of ice cream eaten the previous evening. We know that with some people who are mentally sound and well balanced, gastric or intestinal indigestion will produce fever, in others headaches and dizziness, and in people of a nervous temperament neurasthenic manifestations. It is not difficult to go a step farther and assert that in an individual who has a neuropathic taint and who has at one time been an epileptic, such an irritation will follow the path of least resistance, attack the nervous system and result in an explosion of nerve force of a character similar to that to which this individual was at one time addicted. Why do we have two different attacks—petit mal and grand mal? Because of the different virulence of the poison, which, in the beginning being slight, caused a minor rudimentary outbreak, and later becoming more concentrated, resulted in the greatest explosion of which the individual is capable—a general convulsion.

Apropos of this I wish to digress a moment to recall a case, an excellent illustration of the point I make, that an intoxication will in certain cases seek an outlet in the path of least resistance, manifesting itself in symptoms that have previously existed as an independent condition. The case is one of a young married lady, whom I treated some years ago. She was suffering from sub-acute nephritis. Casts were numerous and albumin abundant. She was progressing quite favorably, but complained one morning of severe

headache, and towards noon of the same day I was hastily summoned and found her in a typical hysterical convulsion. She laughed, rolled her eyes, threw herself about boisterously, and her face assumed that sensual expression so commonly seen during such attacks. Consciousness was not lost and in a short time she had recovered completely. Her sister, who was present at the time, informed me that these attacks were not uncommon occurrences at home. Towards evening I was again summoned and found the patient in convulsions, this time not hysterical, but uremic. These repeated themselves at short intervals and despite every effort, she died on the following day. I can admit of no possibility of error as to the different nature of these convulsions,—at first hysterical, later uremic. This case has impressed me deeply, and the explanation I have to offer, and I believe it to be correct, is that the uremic poison, in an individual who was by nature hysterical, found its path of least resistance,—first, in a condition of psychic instability: the system yielded to the attack and an hysterical outbreak resulted; the poison, however, becoming more concentrated, gradually saturated the system, and the uremic convulsion—that based upon organic changes—was ushered in. I venture to theorize that, could the poison that originated the attack of petit mal in the one case and hysteria in the other, have been neutralized after these attacks, the major seizures (epileptic and uremic convulsions, respectively) could have been prevented.

Case II deals with petit mal of a different type. The patient is a dentist of intelligence and education, has a good personal history, denies syphilis, and is not addicted to alcoholic or other excesses. His father was formerly a great sufferer from headaches, and his father's brother suffers from peculiar attacks, the particulars or nature of which I have been unable to ascertain. The patient gives the following history: He suffered from various infantile disorders, but never had chorea or convulsions. Until the age of 18 (he is now 32) he had frequent and severe headaches. When about 12 years of age he was one day called upon to recite in school; he arose but could not utter a sound; he walked out of the room feeling very dizzy, and for some time was unable to speak intelligibly; then he fell asleep, and after an hour or so awoke refreshed and in a normal condition. These attacks recurred at intervals of about one week, usually during the summer months, though independent of the temperature, and varied somewhat in detail. Headache and dizziness were the earliest symptoms, then occurred either the speech disturbance as described, or else a tingling and numbness, or, a peculiar indescribable sensation would be felt in one foot or hand, traveling upward, sometimes affecting the lips and tongue; a feeling of drowsiness would then come upon him, and a restful sleep of short duration followed.

On several occasions, when he felt the peculiar symptoms begin-

ning in the hand, he tied a cord tightly about the wrist, and thinks to have thus aborted some such attacks.

On September 29 of last year, a sultry day, he walked home, one mile distant, at noon, and again to his office after lunch. On the way he felt dazed and tired. He lay down, then decided to go home. Soon he experienced a tingling sensation in his fingers and lips, and shortly after—though he could at first control his speech—became dull, talked incoherently, complained of intense headaches and fell into a restless doze. In this condition I found him when called in the evening. On the following day he was much improved, and in a day or two was on his feet again, feeling well.

The diagnosis of this attack presents some difficulties. When first confronted with the case I concluded that we were dealing with a condition of cerebral congestion due to the heat of the day—though there were some things wanting to make this explanation entirely satisfactory: there was no sense of fullness, bursting or heat of the head, no congestion of the face; furthermore the sensorium was attacked late and was preceded by the peculiar sensation in the fingers that slowly traveled up the arm and to the face. Admitting, however, the similarity of this attack to one of cerebral hyperemia due to the heat, will it help to explain the nature of the former attacks? I think not, for although this illness came on a hot day, yet the former attacks were independent of the temperature of the day, nor does the patient, who is observant and intelligent, believe in any such association. I cannot rule out that this present attack was not in part a condition of cerebral hyperemia, but we must seek farther for an explanation of those peculiar premonitory symptoms: the numbness or tingling and the peculiar (wave like?) sensation that begins in one extremity, travels upward and is accompanied by dizziness, and the restful sleep of short duration that supervenes and is followed by a rapid restoration to normal. Again we have the patient's statement that he thinks to have aborted oncoming attacks when the premonitory signs were felt in the hand, by tying a cord tightly about the wrist. This advance sign and the possibility of checking the attack remind one so strongly of an aura epileptica, that I deem myself justified in accepting it as such. There is one other disease that comes in for a share of consideration in the diagnosis, and that is incipient multiple sclerosis, the very earliest symptoms of which may be similar to some of those described: dizziness, headaches, brief attacks of dazed periods or unconsciousness, temporary weakness or palsy of the tongue or arm, etc. However, we can rule this out, since we are dealing with a disease of 15 years' standing, and would expect symptoms of organic changes to exist now. In our patient all the special senses are intact, there

are no motor or sensory disturbances, the reflexes are normal. The non-existence of any of these symptoms—to say nothing of the absence of the cardinal signs—permits us to positively exclude multiple sclerosis or any other organic lesion.

Case III is of very minor interest since it concerns an attack with symptoms that resemble the usual type of petit mal more closely than those described. While consulting me at my office, this patient—a man, aged 30—suddenly grew pale, then cyanotic, the head was thrown back, pupils widely dilated, respiration deep, pulse imperceptible, consciousness lost. After about half a minute consciousness slowly returned and the other symptoms subsided, followed by profuse sweating of the head and a feeling of great weakness. Petit mal, in a form like this last case, is simple of diagnosis and a not infrequent variety of epilepsy.

The other cases described are, however, of much greater interest to me, one because of some difficulty in diagnosis, the other because of its offering food for consideration of a speculative nature, and both because of the more unusual character of their symptoms.

THE POSSIBILITIES OF URETERAL CATHETERIZATION.

By G. KOLISCHER, M.D., of Chicago.

The progress made in recent years in the exploration of the human bladder by means of instruments which bring all the parts of the interior of the bladder into clear view, led, in a natural way, to local interferences inside of the bladder, among which the catheterization of the ureters holds a prominent place.

This procedure opens wide prospects not only for the refinement and exactness of diagnosis, but also for therapy, not alone in ureteral, but also in kidney troubles. The first use of ureteral catheterization was in collecting the urine of each kidney separately, so that it was possible to test the activity and efficiency of each kidney in the respective individual.

In recent years this method has become more decisive and reliable through the introduction of the phloridzin test and the so-called cryoscopy; the latter method is especially important because it allows of conclusions concerning the total amount of solids which are eliminated through one kidney during a certain length of time.

While in order to collect urine from each kidney it is necessary to introduce a catheter only a few inches into the ureter, the sounding of the entire length of a ureter is apt to solve other problems. It is easily understood that any obstruction of the ureter, or interruption of its continuity, will soon be discovered by sounding. It has, however, to be kept in mind that for such purposes not hollow catheters, but solid sounds—preferably metallic ones—are to be used. This sounding is of particular value in certain female patients in whom the suspicion of a ureteral fistula exists. The sounding will inform us whether or not the ureter was severed entirely, and at what distance from the bladder the interruption in continuity is located.

If only part of the ureteral wall is damaged, so that only a partial leakage is present, no particular obstruction will prevent a catheter from slipping beyond the lateral fistula; but the leakage will cease as long as the catheter is inserted high up in the ureter, thus proving that only a partial destruction of the ureteral wall is present.

Strictures of a ureter can easily be diagnosed by sounding with metallic sounds, provided the ureteral sound is easily movable inside of the conducting canal of the cystoscope. The ureteral sounding can be of occasional usefulness in detecting impacted stones, or stones lying in the sacculated dilations of the ureter.

In the first case we might encounter a more or less complete obstruction ; if we are very fortunate, we might perceive even a metallic click. In the latter case, the obstruction is only a slight one and easily overcome. Kelly tried to make this method more sensitive by covering the tip of the ureteral sound with a thin layer of wax. After the sound is removed, the wax tip is examined through a handlens. If the sound strikes a stone, characteristic scratches are seen. The results, even of this refined method, are reliable in a positive sense only, because a calculus is quite often covered with so much mucous and pus that it does not make the slightest impression on the surface of passing sounds.

Localizing calculi in the ureters or kidneys, and gaining information about the condition—in particular the formation and size of the renal pelvis, came within the reach of our diagnostic possibilities by the combined use of ureteral sounding and X-ray examination, a method which was first devised and its results demonstrated by Dr. L. E. Schmidt, of Chicago, and myself.

The principle of this method is to pass a lead wire sound as high up as possible into the ureter, and to take an X-ray picture while this sound is still inserted. I will say that the introduction of a

catheter which is armed with a metallic stylet (a procedure which was employed recently by some other surgeons), is not so satisfactory because the necessary thinness of the catheter frequently gives an indistinctly outlined shadow on the X-ray picture. This combination of ureteral sounding and radiography furnishes quite a few diagnostic and differential diagnostic points. The course of the sounded ureter appears quite distinctly outlined on the picture. An occasional obstruction can be accurately located by the ending of the wire shadow and its topographic relations to the shadows of the bones and of the other organs which appear in the X-ray photograph.

The study of the relations of the shadows of calculi, the shadow of the wire, and the shadow of the kidney, will give a good idea of the location of the concrements. At the same time, we get differential diagnostic hints, whether the concrements present belong to the urinary tract or not. Quite often it is almost impossible to pronounce a tumor as being renal or non-renal by any other method of examination. The shadow of the sound appearing on the X-ray photograph as leading into this tumor will at once clear up all the doubts about its nature. For the surgeon who intends to perform some conservative and plastic surgery at the ureter and at the pelvis of the kidney, a previously introduced ureteral sound will prove in many cases a very useful guide. Experiments on cadavers and the comparison of operative findings with X-ray pictures have shown that the end of the inserted lead wire adjusts itself closely to the outlines of the kidney pelvis. In a dilated pelvis the end of the wire curls up according to the distension of the renal pelvis, so that its shadow on the X-ray picture first proves the existence of dilation if that be the case, and gives us, furthermore, a fair idea about the size of the pelvis.

But not only has our diagnostic armamentarium been enriched by ureteral catheterization, but the therapy has also gained considerably by it, although it must be admitted that the therapeutic effects in the majority of cases are only of a palliative and preliminary character. Very gratifying results can be obtained by the flushing out of the renal pelvis in cases of pyelitis, a procedure which was first used by Pawlik, and later on was taken up by most of the surgeons who are familiar with the necessary technique. This flushing out is best done with solutions of silver salts of non-irritating character. While it is true that certain cases will not be entirely cured by this treatment, one result is always to be obtained with certainty, viz., all the patients notice great and immediate relief in respect to their subjective symptoms, and in almost all the cases the general condition improves

even if the treatments are given at long intervals. I have cases of old standing under my observation in which, although a cure was never accomplished, the patients since their first flushing out have always been kept in fair condition by repeated treatments given at intervals. These intervals extended from four weeks to two months, according to the time when the patients noticed a return of the first subjective symptoms.

In cases of suppuration in the kidney, where coagulation and the formation of flakes takes place, the ureter might easily become plugged up, partially or completely. It is easily understood that in such a case catheterization of the ureter and flushing out will relieve the condition immediately. The impaction of a stone in the ureter can in many cases be relieved in short order by a method which I devised and first employed with complete success in a case of this kind about seven years ago. This method consists in inserting as large a catheter as possible into the ureter up to the seat of obstruction and then injecting albolene through the catheter in rather large quantities. In this way the calculus becomes loosened, the ureteral tube underneath becomes dilated, and the concrement drops through the lubricated canal into the bladder after the catheter is withdrawn.

I have had personal experience with three cases of this kind, while later on Casper and Housmann each published one such case treated successfully by my method.

The importance of such a proceeding is appreciated if we consider that such a complication is the source of very severe subjective symptoms, and occasionally leads to complete reflex anuria, and that the above mentioned interference does not amount to much, and even in very sensitive patients can easily be executed under morphine narcosis.

It must be mentioned that occasionally gravel becomes caked together in a ureter, thus forming an obstruction. By running a sound up to this point we might succeed in breaking up this conglomeration so that the component gravel is then easily washed down into the bladder. A case of this kind was published by Casper in 1898. Occasionally a stone which rests in a sacculation of a ureter might become loosened by ureteral catheterization, so that it passes down into the bladder. Although this must only be considered a matter of good luck, quite often in such cases we are able to furnish a patient great relief, although we do not succeed in removing the concrement. The presence of such a concrement quite often gives rise to abundant

pus and mucus, so that the ureter becomes dilated and occasionally clogged up. Flushing out the ureter by means of ureteral catheterization will furnish immediate relief lasting for some time.

Another important task for ureteral catheterization is the treatment of ureteritis. Ureteritis of gonorrheal origin is a not infrequent occurrence in patients of both sexes. As a rule, at least for some length of time, this inflammation is confined to the lowest part of the ureter. This ureteritis is not only a permanent source of re-infection for the bladder, and a permanent menace to the kidney, but it also causes very disagreeable subjective symptoms, among which spasms of the bladder and dull pains in both sides are the most prominent ones.

Ureteral catheterization enables us to wash out the ampulla of such an inflamed ureter, and to follow this with instillations into the inflamed part of the organ. These instillations are done with solutions of silver salts, and not with solutions containing mercury combinations, as was lately suggested. We all know that a kidney is extremely susceptible to mercurial poisoning.

In conclusion, I desire to plead most strongly for the use of cystoscopes for ureteral catheterization built on the principle of Nitze's cystoscopes, the preferable ones being Casper's and Brenner's instruments.

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EDITORIAL COMMENT.

THE STATE MEDICAL SOCIETY MEETING.

The coming meeting of the State Medical Society will be one of the most important ever held in the history of the organization. This is chiefly owing to the fact that the question of reorganizing the Society will then come up for definite and final action.

Originally the membership of the Society was limited to delegates from the county societies. At that time the transportation facilities were very poor and the population scattered, and the number of physicians in the State was small. The counties were careless and negligent in the matter of organizing medical societies under the act of the Territorial Legislature of 1841. A few counties appointed delegates

to attend the State Society, and some of these attended the meetings and others did not.

The Medical Societies of Milwaukee, Sheboygan, Fond du Lac, Dane, Iowa, Walworth, Rock and Brown counties were the only ones that were ever represented in these early meetings. Finally it was regarded as a matter of paramount importance that a permanent membership should be provided for, and to that end the Society was reorganized in 1854, with provision for such a membership. The new order of things has proven comparatively satisfactory up to the present time, and would no doubt continue to be satisfactory for some years to come were it not for the fact that a widespread and determined effort is now being made to bring together the whole medical profession of the United States into one great and powerful organization, with the County Medical Society as the starting point, every member of the County Society being—in virtue of such membership—a member of his State Association. As a result the membership in the State Association would be so enormously increased that the business of the organization would need to be placed in the hands of a more limited, and, therefore, a more manageable body of men. Hence the provision for a body of delegates whose office it will be to supervise the business affairs of the Association. The by-laws of the State Association provide for chartering county societies, and very properly make it obligatory upon the State Association to charter all those county societies that have hitherto been in affiliation with it. Thus in our own State, if the old societies are still in legal existence, the Medical Societies of Milwaukee, Dane, Sheboygan, Fond du Lac, Iowa, Walworth, Brown and Rock counties will be granted a charter on application. In the other counties new societies will need to be formed and it is to be hoped that as many of the counties as possible will perfect their organization before the June meeting of the State Society, that they may be represented in the new State Association, and that their members may be eligible to membership in the American Medical Association. The manifold benefits that may be expected to arise as a result of this important move on the part of the medical profession are almost too obvious to even require mention: Decreased per capita expense to members; increased value of the Journal of the Association by reason of the increased income; greater influence upon legislation and sanitation; more effective work in the enforcement of medical laws; a general improvement in the social status of the profession; a more profound influence upon medical education in the direction of general efficiency, and more adequate and higher preliminary qualifications; lessening the frequency of petty quarrels and misunderstandings; and by its own scientific work raising the general

efficiency of the whole medical profession. These are objects which should command the active aid of every man and woman in the state who possesses even in an inferior degree that professional spirit so essential in medical practitioners.

Too much importance cannot possibly be attached to membership in a good live medical society. The benefits of such membership are not properly understood and appreciated by many in active practice, and this is too often true of the younger men, recent graduates in medicine. The medical society is the post-graduate school for the practitioner of medicine. He who pursues his daily duties alone soon falls into a routine system of practice; his mental horizon, instead of broadening, contracts, and he never attains the mental growth and technical skill he might otherwise achieve.

To try a case in law requires an attorney on each side, and lawyers, therefore, come into close and constant contact with each other, thereby developing sharpness of wit, lucidity of thought, accuracy of speech, mental acumen, and besides—a great fund of information, and capacity for applying the same.

To attend a medical case generally requires but one physician. The work is done without the sharp eye and keen mind of a watchful and critical brother practitioner, and hence the strong tendency to slip-shod and slovenly work, and equally loose, unsystematic and inaccurate cerebration.

Regular attendance at the meetings of the County, State or District Medical Societies tends to correct and obviate all this. In fact, the city practitioner enjoys no advantage over his country colleague except opportunities for frequent contact with his confreres, thereby enabling him to develop his native capacities to the utmost. In the present condition of settlement in Wisconsin, nearly all the counties should have fully organized societies by next June, and the future careers of these societies should redound to the sanitary advantage of every such county.

The Medical Society of Milwaukee County—with a history of over half a century to its credit—has reorganized on the lines laid down by the committee of reorganization of the American Medical Association, has invited every legally qualified practitioner in the county to come into its membership, has applied to the State Society for a charter, has raised its membership to above 150, and will enter upon its new career of usefulness with its pristine energy undiminished.

The JOURNAL cannot too strongly urge upon the younger members of the medical profession, as well as the older ones, the educational advantage to be derived by membership in an active medical society,

and further—to urge that the regular meeting times of the society be made a "previous engagement." Thus only will the society work out its destiny. Thus only will the practitioner be enabled to achieve all that he is capable of achieving.

EXPERT TESTIMONY.

There is great need of a change in the manner of securing so-called expert testimony. Judges and lawyers vie with each other in making adverse criticisms upon the testimony of experts, but in the main, they are responsible for the existing conditions which they so loudly decry.

It is time that the medical profession as a body, made its influence felt in this matter, and endeavored to bring about a decided change in the unsatisfactory methods now employed.

When an attorney, or any other honest man, is called upon to express an opinion about a business matter, he expects or demands to be made acquainted with *all* the facts, and if he be honest, he will not venture to give an opinion until he does know *all* the facts. Indeed, it is a common remark made by conscientious attorneys that they will have nothing to do with a case unless they are first made acquainted with all the facts. Then they are prepared to express an opinion upon the merits of the business entrusted to them.

It is said, and we believe the saying to be true, that an attorney will dismiss a client, for the reason that the client has not made known the whole truth: in other words has attempted to deceive, by withholding important material which might change the aspect of the case, and the attorney's opinion. But this very important measure which they demand for themselves and without which they will not proceed with their investigations, attorneys deny to the medical man whom they call upon for opinions which are to be used for the sole purpose of influencing the court and jury.

As such affairs are conducted at present, the attorneys interested upon one side introduce every atom of evidence favorable to their side, and by every artifice known to the profession, attempt to belittle or destroy all adverse testimony.

Having heard but one side of the case, and often only the least important testimony, a medical gentleman is called upon to state his opinion upon the circumstances brought out in that testimony.

Then the other attorneys, having charge of the defense, bring out all the testimony they can collect, which may be vastly more important in its bearing upon the subject of disease or injury than any already introduced, and another medical gentleman is asked to express his opinion upon the last testimony introduced, without reference to any

preceding testimony; and his opinion may be the reverse of the first expert, yet each one has given an honest opinion.

Indeed, it is not infrequently the case that the same expert says "yes" to the questions propounded by the lawyers on one side, and "no" to those propounded by the lawyers on the other side, yet giving an honest answer in each instance.

No man, be he judge, lawyer or doctor, can give an intelligent opinion upon any subject when only one part of the subject has been presented; and yet that is just what medical men and experts in all departments of human experience are now required to do.

As a result the attorneys wrangle about the differences in the opinions of the medical profession, for which they are themselves blameworthy. The remedy is not hard to find. There can be no question as to who is meant by an expert, namely one who has special skill in some branch of science; and not only special skill, but practical experience. The experts should be named by the judge after consultation with all the attorneys interested. When selected, the experts should first hear all the testimony before being permitted to express an opinion.

To simplify matters still further, and, we believe, to secure better results, the judge should be authorized to examine the experts, receiving any suggestions from the attorneys which they may see fit to make, and which the judge may use or not, as he may think proper.

We have seen this method used in two important trials and the results were satisfactory in every way: it was creditable to all concerned and there were no differences of opinion among the experts in any essential point. The "hypothetical questions" ordinarily propounded are often misleading and unjust, sometimes being drawn for the express purpose of bewildering the witness and perverting the truth. These are sharp accusations, but anyone who has watched carefully the proceedings in cases where expert testimony is used, can vouch for the truthfulness of the statements.

While it is not our purpose to disparage in any manner the value of testimony given by medical men, something remains to be said about the subject of experts in the medical profession.

At present any reputable person holding a diploma from a regularly incorporated medical college may testify as an expert, although he may never have had any personal experience with the disease or injury which is the subject of controversy. This is manifestly unjust and unfair.

Not only should an expert be well read in his profession, but

added to his reading should be the very important factor of personal experience, and observation of cases like the one before the court.

It is unfair to all, to place upon the witness stand as an expert one who is a tyro in the profession, no matter how well informed he may be in book lore, or how suave he may be in speech, but who has had no practical experience.

Just so long as these unwise things are permitted, just so long will so-called expert testimony be a laughing stock. It is time for the medical profession to enter a decided protest against the methods now employed to secure expert testimony and attempt to correct the unfair and illogical way now in use.

INSANITY BILL.

There is at present a bill before the Assembly (223 S) which medical men cannot regard other than hostile to the best interests of their patients. It provides that "no order of commitment of such insane person to such hospital or asylum for the insane shall be made and entered *"until such insane person has appeared personally before the judge and had an opportunity to be heard in his own behalf."* This would easily be interpreted to mean that no person could be committed without appearing in court. The friends of the bill, however, explain that it only requires that the insane person appear before the *judge,* not the *court* (judge and court being easily confusable terms). Such appearance, they say, may be at the patient's home, on the street, anywhere—merely that the judge shall see the patient.

If this is the meaning the bill should be amended to say what it means clearly, namely, that no commitment shall be made until the judge shall have seen the patient.

But even so amended it is likely that, for the convenience of judges and other reasons, it would become the practice of calling the insane man before the court—or the alleged insane man, to be more accurate in the eye of the law. To make such appearance compulsory, as such a law would tend to do, would be a most deplorable thing. It is in direct violation of all accepted experience in the commitment of the insane. Indeed, it was to avoid such a thing that the far-reaching and well-considered act of 1897, the present statute, was passed.

Such a course, ruthlessly pursued—as it might be by some judges —would result in patients being called from sick beds to the court, others from long distances in inclement weather to the county seat, others who are violent, and others whose delusions of persecution would become well organized by appearing before what is to them a criminal tribunal. Some, by thus having notice some time in advance of com-

mitment, would be moved to flight, suicide, or to the injury of others. In the absence of county judges other judges would be obliged to interrupt the business of the court to attend to such cases as require prompt attention. Many patients, rather than appear before the court, would refuse commitment to which they now often consent for the sake of treatment. Their friends, too, would hesitate to apply for their commitment, were it coupled with a hearing in the court and a public airing of the details of the illness. Wherever difficulties are laid in the way of commitment delays are encouraged, and to this extent the great benefits of early treatment are lost and our hospitals for the insane thereby lose their distinctive character as hospitals and assimilate to asylums for chronic cases. These are but some of the objections to a compulsory appearance in court before commitment—objections which all hold in practical experience.

Since our present statute already allows the judge to call the patient before him in suitable cases, and "leans backward" in protecting the patient from any injustice, and since it has worked no harm whatever in this direction, the bill is as unnecessary as it is pernicious.

It has passed the Senate committee and is at present (April 24th) before the judiciary committee of the Assembly. For the benefit of those who might be moved to protest against its passage the names of the members of the assembly judiciary committee are given as follows: F. A. Cady, chairman, Grand Rapids; Ira B. Bradford, Augusta; A. S. Douglas, Monroe; H. L. Ekers, Whitehall; W. C. Cowling, Oshkosh; M. S. Dudgeon, Madison; M. J. Wallrich, Shawano; R. C. Smelker, Dodgeville; F. J. Carpenter, Stevens Point; E. A. Strong, Ashland; Jos. F. Martin, Green Bay; C. F. Morris, Iron River. Senator Reukema introduced the bill, which is known as 223 S. Immediate action, however, is necessary.

The gist of the objection lies in *compelling* all patients to be seen by the judge, which would easily develop into the practice of having them all appear in court. This should be *discretionary,* as it is in our present statute, in order that it may not be applied where it would be injurious or dangerous, or add to the mental anguish of the unfortunate patient.

AN ADVERTISING DODGE.

An interested friend who believes the JOURNAL is not as black as it is painted ,writes us of the use made of our JOURNAL'S name for the propagation of an advertising dodge. A work on Occultism, Hindoo magic, etc., is advertised by a Dr. De Laurence, of Chicago, who "as an author and final authority on Occultism is endorsed by medical jour-

nals, newspapers," etc. If his occult practice has led the professor to assume our endorsement probable, his art has for once proven false. We do not know Dr. De Laurence, never did know him, don't want to know him, and never thought him sufficiently elect to be favored with mention in these columns prior to this time. We disclaim any desire to improve the minds of our readers to the extent of adding to our foreign correspondence department a section on Occultism and Hindoo magic.

CAUSE OF SMALL POX.

The announcement, just received, of Prof. Councilman's discovery of a protozoan of smallpox reaches an expectant medical public that has for decades been looking forward to this consummation of skillful laboratory research.

The conceded scientific ability of Prof. Councilman gives to such an announcement a degree of credence that would not be accorded all investigators, and therefore we hail with much hopefulness the dawning of an era that will see the vanquishing of even smallpox. Corroboration and further experimentation are, of course, needed, and countless workers will now direct their efforts to this fruitful field. We look forward with much impatience to future results.

Coming on the heels of von Behring's recent work on the immunization of cattle against tuberculosis, ought there still be doubters—even among the laymen—that experimental pathology is destined to revolutionize the treatment of infectious diseases, and will result in a boon to mankind hitherto undreamed of in the wildest flights of any "anti" imagination?

NEWS ITEMS.

State Medical Society Meeting.—All the meetings of the Society will be held in the arcade of the Plankinton House, which will be provided for the occasion with a sounding board and closed from the hallways by portiéres.

A room adjoining the arcade will be used for the microscopical demonstrations.

The exhibits of the various drug companies, instrument houses and book concerns will be in the clubrooms.

A smoker will be tendered the visitors by the Milwaukee Medical Society at the Society rooms in the Goldsmith Building on the evening of June 3d. Drs. A. W. Gray, E. Copeland and W. H. Washburn constitute the smoker committee appointed by the Milwaukee Medical Society.

The banquet of the Society will be held on the evening of June 4th at the Plankinton House, and will be preceded by an informal reception in the hotel parlors. Drs. Bryant Smith and N. M. Black are the sub-committee having charge of the arrangements for the banquet.

All indications point to an interesting and successful meeting. It should be the largest meeting the Society has ever held.

Members are urged to come and bring their medical friends and neighbors and so make the Society what it should be: representative in the highest degree of the entire profession of the State.

Milwaukee Medical College Censured by National Association.— According to dispatches in the public press of May 5th, the Judicial Council of the Association of American Medical Colleges at the New Orleans meeting reported that the charges of irregularities preferred by the Medical Society of Milwaukee County against the Milwaukee Medical College had been sustained, and recommended that the College be indefinitely suspended from membership in the Association.

Upon motion the College was suspended. After some further consideration, however, a plea for leniency having been made by Dr. A. H. Levings, President of the Wisconsin College of Physicians and Surgeons, and Dr. W. A. Evans, President of the Chicago Medical Society, the vote was reconsidered and the College was "severely censured."

Jewish Hospital Staff.— The following physicians have been appointed members of the staff of the new Jewish Hospital, Milwaukee:

Physicians—A. J. Patek, president; Jos. Kahn, secretary; W. H. Washburn, B. L. Schuster.

Surgeons—A. H. Levings, A. J. Burgess.

Assistant Surgeons—L. C. Tisdale, C. H. Stoddard.

Obstetricians—Spitz, A. W. Gray.

Gynecologists—E. Copeland, F. Shimonek, H. L. Nahin.

Dermatologists—L. Schiller, O. H. Foerster.

Aurist and Laryngologist—H. B. Hitz.

Oculist—Chas. Zimmermann.

Pathologist—C. G. Willson.

Dental Surgeon—E. Eisen.

A Symposium on Modern Prostatic Investigation.— *The American Journal of Dermatology and Genito-Urinary Diseases*, published at St. Louis, Mo., announces that its entire issue for May, 1903, "will be devoted to a symposium on Modern Prostatic Investigation.

The leading surgeons of the world will take part in this work, which will be discussed, arranged and presented in a manner never before undertaken. The following subjects will be discussed: (1) To what extent occupation tends to prostatic hypertrophy, with especial reference to active in-door, active out-door, and sedentary pursuits. (2) Which suffer oftenest, the phlegmatic or nervous, the lean or obese? (3) Etiology of prostatic hypertrophy. (4) To what extent the Cystoscope has been of service in diagnosis. (5) To what extent habit is responsible for prostatic hypertrophy, with especial reference to the use of alcohol and constipation. (6) In what cases palliation is advised, and of what it consists. (7) Ligation of the vasa deferentia and results. (8) Castration for prostatic hypertrophy and results. (9) Bottini

operation, or some modification of this treatment, and its success, with especial reference to complications, permanency of relief, etc. (10) Supra-pubic drainage, with an estimate of results. (11) Supra-pubic prostatectomy and results obtained. (12) Perineal prostatectomy and with what success. (13) Operation of choice for prostatic hypertrophy. (14) What unexpected complications have arisen during the operation for prostatic hypertrophy, and what during the post-operative conduct of cases. (15) Resumé of prostatic work."

University of Pennsylvania.— The new laboratory building for pathology, physiology and pharmaco-dynamics now being erected at a cost of $600,000 will be dedicated on February 22, 1904.

Plans have been drawn for a $300,000 addition to the University Hospital and work on the new structure will soon begin.

Dr. Simon Flexner's successor in the chair of pathology has not been selected.

Prospective Vacancies on the State Board of Medical Examiners.— The terms of Dr. H. B. Hitz, of Milwaukee, and Dr. Samuel Bell, of Beloit, as members of the Wisconsin Board of Medical Examiners expire shortly.

Under the law their successors will be appointed by the Governor from a list of ten names suggested by the State Medical Society at the annual meeting. Dr. Bell has served two terms and is, therefore, ineligible for re-appointment. He retires with the well deserved commendation of the profession for the excellent work he has done on the Board. Dr. Hitz's work on the Board entitles him to re-appointment if he can again he induced to accept.

Qualifications for Admission to Medical Colleges.—The qualifications for admission to a medical college favored by the majority of the special committee named by the Association of American Colleges to settle this question are as follows:

Every college holding membership in this association shall demand of each student as a minimum requirement for admission to the medical course either (a) a diploma for a four years' high school or academy whose credits are accepted by a state university; or, (b), the diploma of a state normal school having a course of instruction equivalent to a four years' high school whose credits are accepted by a state university; or (c), a certificate of admission to the freshmen class of a state university or a college whose credits are fully recognized by a state university; or, (d), an examination in the following branches: (a) English grammar, rhetoric, and composition, the equivalent of two years of high school work in this branch.

(b) Algebra to quadratics.

(c) Latin, one year high school work, including grammar and four books of Cæsar or a full equivalent therefor.

(d) Physics, one year of high school work, including some laboratory work.

(e) United States history, one year of high school work and seven additional branches of the student's choice selected from the following: Latin, one year; Cæsar, Cicero or Virgil.

French, German, chemistry, botany, zoology, one year; geometry, one year; plane geometry, one year; trigonometry, astronomy, physiology, physical geography, English literature, advanced algebra, and civics, one year.

Candidates for the degree of doctor of medicine shall have attended four year courses of study each and at least twelve months shall intervene between the beginning of any course and the beginning of the preceding course. Credit for one year of time may be given to students holding the degree of A. B., or other equivalent degree from a reputable university or literature college.

A college which gives less than a four years' course of medical study, but does not graduate students and is possessed of other qualifications may be admitted to membership.

State Sanitarium for Tuberculosis.—Mr. Karel, the author of the bill to provide a State Sanitarium for tuberculosis, realizing the improbability of the passage of the bill by the present Legislature, has introduced a resolution for the appointment of a committee of experts by the Governor to investigate the tuberculosis situation in Wisconsin, and report at the next legislative session. He believes that in this way the Legislature and the people may be educated up to the point of taking proper steps for the control of the disease.

International Medical Congress.—Dr. H. V. Würdemann and Dr. G. V. I. Brown, of Milwaukee, and Dr. R. H. Reed, of Rock Springs, have gone as representatives of the American Medical Association to the International Medical Congress at Madrid, Spain.

Anglo-American Club of Vienna.—There are always about 400 Americans in Vienna, of whom the majority consists of musicians and physicians. After an effort extending over several months, the prospects appear good for the formation of an Anglo-American Club. With such a club, newcomers will have less trouble in the future in obtaining information about the city, and especially about the work in which they are interested. It is to be hoped that the spirit of good fellowship will increase as the opportunity grows for the closer acquaintance among the English-speaking community.

Children's Hospital of Milwaukee.—Mr. H. H. Camp has given his magnificent and spacious residence on Tenth Street, near Wells, to the Children's Hospital Association to be used for hospital purposes. The building is one of the finest and largest private residences in the city, and is admirably suited for the purpose. The Children's Hospital has already collected a considerable building fund, which will undoubtedly be applied to the hospital finances. With Mr. Camp's generous gift the hospital will be on a sound financial basis.

Anti-spitting Ordinance.— Dr. F. M. Shulz, Commissioner of Health of Milwaukee, is again agitating the passage of an anti-spitting ordinance. He is receiving the active support of the various women's clubs of the city, and the indications are favorable to the passage of the proposed ordinance.

Smallpox in Milwaukee.— The number of cases of smallpox has rapidly decreased of late in Milwaukee, so that at the present time there are only three cases in the Isolation Hospital.

Medical Bill.— The revised medical bill, printed in our last issue, has passed the Legislature and will no doubt be signed by the Governor.

CORRESPONDENCE.

CHICAGO LETTER.

Hydrophobia in Chicago.—Dr. Bevan, in a recent paper, emphasized the danger of a widespread epidemic of hydrophobia in this locality, if more stringent measures were not enforced. There has been a yearly increase in the number of victims, and at present an alarming increase in the number of animals suffering with rabies.

Dr. Bevan insisted that our present "muzzling law," which is inactive between Nov. 1 and April 1, is stupidly inefficient. This peculiar time limit is based on the erroneous conception that rabies is not prevalent during the winter months.

In England, where a proper muzzling law is rigidly enforced, the disease is practically extinct. Accordingly he presented the following resolution, which was unanimously passed by the Chicago Medical Society:

"The Chicago Medical Society, through its board of counselors, calls the attention of the city authorities to the fact that the disease hydrophobia is prevalent in the city; that it is possible to practically eradicate it by proper dog laws, properly enforced. Therefore, it respectfully petitions the mayor and the common council to immediately take such steps as are necessary to accomplish this result."

The Presbyterian Hospital Training School.—A school for nurses has been established at the Presbyterian Hospital. The course extends over three years. Lectures by members of the hospital staff and the Rush Medical faculty have already begun.

Hospital to be Licensed.—The recent repeated fatalities in small questionable hospitals induced the common council to pass an ordinance licensing all hospitals in Chicago and placing them under the supervision and inspection of the department of health.

Pneumonia.—The meeting of the Chicago Medical Society held March 25, was entirely devoted to the consideration of the subject of pneumonia.

Dr. J. L. Miller, in a paper on "Pneumonia Septicemia," spoke of the frequent occurrence of the bacteria in the blood, even as early as the second day of the disease. From a prognostic standpoint, the finding of a septicemia indicates a grave prognosis.

Dr. Arthur R. Edwards read a paper on "The Diagnosis of Pneumonia," in which he emphasized the difficulty of recognizing the disease in the aged, the alcoholics and in children, and of the frequent failure to recognize a pneumonia secondary to other diseases. Sudden death in many diseases is often pneumonic.

Dr. James B. Herrick, on "The Treatment of Pneumonia," said it was expectant and symptomatic. Since we had no specific remedy as yet, pneumonia must be treated on the broad principles of hygiene and diet that prevail in our present method of handling a case of typhoid fever. He spoke of the danger that often prevails, of overdrugging the patient. (M. M. P.)

BALTIMORE LETTER.

The Bacteriology of Summer Dysentery. Hepatic Cirrhosis in Children. Congenital Defects of the Iris. A Case of Typhoid Fever Without Demonstrable Lesions.

During the month of March the Johns Hopkins Hospital Medical Society has held two regular meetings. On March 2d the subject before the Society was *dysentery*, the discussion being carried on mainly by Dr. Simon Flexner, of Philadelphia, and Dr. Knox, of the Thomas-Wilson Sanitarium.

Dr. Knox spoke first. His paper was on the subject of summer diarrhea in children as he had studied it in fifty cases at the Sanitarium last summer. He divided the cases into two main groups. Under the first he included what he terms the acute toxic cases in which the onset is sudden with nausea, vomiting and diarrhea. The diarrhea later in the attack consists mainly of mucus and may be tinged with blood. In a few hours the temperature drops below normal and a clamminess of the skin develops. Death may take place inside of three days. At autopsy little is to be made out in these cases. Usually a slight increase in the size of the solitary follicles of the intestine is noted. The second group he designates as subacute and chronic. In these cases there is slow emaciation with frequent recurring attacks of diarrhea. There is much colic and tenesmus. Blood is a prominent feature in the stools. At autopsy definite inflammatory lesions are found in the lower bowel. The follicles are swollen and many show necrosis with sloughing and the formation of ulcers.

An analysis of fifty cases showed about one-third to be of the acute variety, while two-thirds were of a more chronic nature. The patients were all under two years of age. From his study of the cases and the history obtained, Dr. Knox suggested that the disease was probably carried largely in unboiled milk and water. Bacteriological study of the stools last summer showed the presence of Bacillus dysenteriæ in the majority of cases.

Dr. Flexner next took up the discussion, and gave a brief review of the recent work on the dysentery bacillus. He spoke of the history of the work done in the past by Shiga, in Japan, and Kruse, in Germany. The most brilliant promise for the future in the treatment of this disease—Dr. Flexner thinks—lies in the antidysenteric serum which is now the subject of a good deal of experimentation.

On March 16th the medical meeting opened with the exhibition of two very interesting cases by Dr. Osler, which were shown as illustrations of *cirrhosis of the liver in children*. The first, a girl of seven, was admitted to the hospital February 7th. There is a probable history of lues, for the child's mother has had several miscarriages. The patient's brothers and sisters are all well. There is nothing in the past history. The child has been failing in health for some time, and recently her mother has noticed that the abdomen was increasing in size. On examination the patient is seen to be small for her age. There has been some falling out of the hair. The teeth are in good condition, there are no scars at the angles of the mouth, the corneæ are clear, the nose is well formed; in fact, none of the usual signs of congenital syphilis are present. The abdomen is found to be distended in the right hypochondriac region. The veins over the abdomen are enlarged. The liver is felt below

the costal margin. It is firm and smooth. The edge of the left lobe is easily palpable. The spleen is definitely enlarged. There are no signs of ascites or edema. A diagnosis of cirrhosis of the liver was made, probably of syphilitic origin.

The second case—a boy of thirteen—showed some different features. He was admitted February 27th, complaining of a swollen abdomen. There is nothing of importance in the family history. The boy has been feeling listless all winter. The swelling of the abdomen was first noticed by his father on the day before admission. For two weeks before this the patient had been spitting blood every morning. On examination the abdomen is found markedly enlarged. There is no palpable tumor or tenderness. There is definite fluctuation. Percussion shows flatness in the flanks and tympany in the umbilical region. The abdominal veins are much distended. The liver dulness in the anterior axillary line extends from the right fourth interspace to the costal margin. The liver is not palpable. In this case the diagnosis lay between tubercular peritonitis and cirrhosis of the liver. Dr. Osler thought the indications were in favor of the latter diagnosis. The day after the patient was shown before the society, six liters of a translucent yellow fluid were removed from the abdominal cavity. Operation was decided on. On opening the abdominal cavity an atrophic cirrhosis of the liver was revealed.

Dr. Reik exhibited three interesting ophthalmological cases. The cases were shown to illustrate *congenital defects of the iris.* The patients all belonged to one family—the mother, and a son and daughter. The mother had coloboma of the iris, and suffered only from slight dimness of vision. The daughter showed complete absence of the iris in both eyes, with congenital cataract, a squint, and a tendency to glaucoma. Her vision was very imperfect but had improved after needling of one of the cataracts and complete removal of the other. The son also had complete absence of the iris, congenital cataract, nystagmus and a convergent squint. The squint had been cured by operation.

Besides this interesting series of cases, two papers were read which deserve mention. The first was a review of Ehrlich's side chain theory of immunity by Dr. Marshall of the pathological department. The second was a report by Dr. Harris of a case of *general infection with the typhoid organism with no intestinal lesions.* Blood cultures during life showed the bacilli in abundance. Post-mortem the patient was found to have had a complication of conditions, so that there was considerable doubt as to what really was the immediate cause of death. The bacteriological department claims that it was the typhoid infection, while the pathologists claim that it was carcinoma. The case, however, is rather unique in showing such an apparently virulent typhoid infection with no sign of intestinal lesions to be found. The possibility remains that the typhoid lesions were slight and had healed before the fatal termination. (R. G. W.)

STATE MEDICAL SOCIETY PROGRAMME.

ORDER OF PROCEEDINGS.

WEDNESDAY, JUNE 3, 1903.

MORNING SESSION.—11:00 O'CLOCK.

Call to Order by the President—J. V. R. Lyman.

Invocation—Rev. Wm. A. Smith.

Address of Welcome—Hon. Davis S. Rose, Mayor of Milwaukee.

Response by the President of the Society.

Report of the Chairman of Committee on Arrangements—U. O. B. Wingate.

Report of the Chairman of Program Committee—T. J. Redelings.

Report of Committee on Reorganization—J. F. Pritchard, Chairman.

WEDNESDAY AFTERNOON.—2:00 O'CLOCK.

PAPERS.

1. Hemorrhage into the Cranial Cavity Following Fracture of the Skull—Chas. H. Lemon, Milwaukee. Discussion opened by A. J. Burgess and W. H. Earles, Milwaukee.

2. Retrodisplacement of the Uterus—G. A. Kletsch, Milwaukee. Discussion opened by A. J. Puls and F. Shimonek, Milwaukee.

3. The Scientific and Practical Value of Bacteriological Examinations of the Blood during Life—L. Hektoen, Rush Medical College, Chicago.

4:00 O'CLOCK.

The President's Address—J. V. R. Lyman, Eau Claire.

4. Management of the Mother During Child-bed Period—A. D. Gibson, Park Falls. Discussion opened by Dr. H. B. Tanner, Kaukauna, and G. E. Baldwin, Dartford.

5. The Diagnosis of Hysteria—Hugh T. Patrick, Northwestern Medical School, Chicago, Ill. Discussion opened by W. F. Becker, Milwaukee.

6. Shortcomings of the Physician, Particularly in his Relation to the State and Hygiene—Albert F. Fuchs, Loyal. Discussion by Ralph Elmergreen, Milwaukee.

7. The Sequelæ of Adenoids—C. D. Conkey, West Superior. Discussion opened by H. B. Hitz and J. S. Barnes, Milwaukee.

8. Indigestion. A Few of Its Causes and a Few of Its Effects—H. B. Sears, Beaver Dam. Discussion opened by Geo. M. Steele, Oshkosh, and Lorenzo Boorse, of Milwaukee.

THURSDAY MORNING, JUNE 5, 1903.

9:00 O'CLOCK.

9. Semilunar Cartilages, Their Anatomy and Surgery—H. A. Sifton, Milwaukee. Discussion opened by A. H. Levings, Milwaukee.

10. The Lymphatic Constitution. Walter H. Sheldon, Madison. Discussion opened by W. D. Sheldon, Reedsburg, and Wm. Thorndike, Milwaukee.

11. Immunity and Its Relation to Surgical Pathology. J. M. Dodd, Ashland. Discussion opened by J. M. Beffel, Milwaukee.

10:00 O'CLOCK.

The Annual Address in Medicine.

The Diagnosis and Treatment of Nephritis—Arthur R. Edwards, Northwestern Medical School, Chicago.

12. The Doctor's Suffrage—Ralph Elmergreen, Milwaukee. Discussion opened by A. F. Fuchs, Loyal.

13. Ethyl Chloride as a General Anesthetic. Frank Pfister, Milwaukee. Discussion opened by John Madden, Milwaukee.

14. Post-mortem Degeneration of the Pancreas—Wm. F. Becker, Milwaukee. Discussion opened by Herman Reineking, Sheboygan.

15. The Practice of Obstetrics—E. F. Fish, Milwaukee. Discussion opened by James S. Reeve, Appleton.

THURSDAY AFTERNOON, 2:00 O'CLOCK.

16. Prostatectomy—T. W. Nuzum, Brodhead. Discussion opened by A. H. Levings, Milwaukee.

17. Significance of Perforating Wounds of the Eyeball—J. A. Bach. Discussion opened by F. T. Nye and G. E. Seaman, Milwaukee.

18. Albuminuria in the Apparently Healthy—W. H. Washburn, Milwaukee. Discussion opened by C. E. Albright and Stanton Allen, Milwaukee.

4:00 O'CLOCK.

The Annual Address in Surgery.

Surgery of the Stomach—Dr. Mayo, Rochester, Minn.

19. Diagnosis and Treatment of Some of the Inflammatory Conditions of the External Ear—Gilbert E. Seaman, Milwaukee. Discussion opened by N. M. Black and J. A. Bach, Milwaukee.

20. Compound Fracture of Lower End of Humerus—W. H. Palmer, Janesville. Discussion opened by R. C. Brett, Green Bay.

21. The Early Treatment of the Infant. Bertha E. Thomson, Oshkosh. Discussion opened by J. R. Barnett, Neenah, and G. M. Steele, Oshkosh.

FRIDAY MORNING.—9:00 O'CLOCK.

22. Septal Deflections. Their Significance and Treatment—F. T. Nye, Milwaukee. Discussion opened by Nelson M. Black, Milwaukee.

23. The Depurative Function of Organs—W. E. Fairchild, Green Bay. Discussion opened by R. C. Brown, Milwaukee.

24. Myomectomy of Uterine Fibroids—A. J. Puls, Milwaukee. Discussion opened by Edward Evans, La Crosse.

25. Surgical Progress—W. H. Earles, Milwaukee. Discussion opened by C. W. Oviatt, Oshkosh.

26. Manifestations of Rheumatism in Infancy and Early Childhood—Arthur T. Holbrook, Milwaukee. Discussion opened by L. Boorse and A. W. Gray, Milwaukee.

27. Diabetes—W. H. Neilson, Milwaukee. Discussion opened by Chas. Gorst, Baraboo, and L. F. Jermain, Milwaukee.

28. Caesarian Section—J. C. Cutler, Verona. Discussion opened by C. W. Oviatt, Oshkosh, and W. H. Sheldon, Madison.

SOCIETY PROCEEDINGS.

MILWAUKEE MEDICAL SOCIETY.

Meeting of April 14, 1903.

In the absence of the president, Dr. Wm. H. Washburn acted as temporary chairman.

Dr. F. A. Thompson was elected an active member of the Society.

Dr. A. W. Myers read a paper entitled "Digestion in Infancy." (This will appear among the original articles in the next issue of the JOURNAL.) Drs. A. W. Gray, J. M. Beffel and I. D. Mishoff took part in the discussion.

BRAINARD MEDICAL SOCIETY.

The quarterly meeting of the Brainard Medical Society was held at the Milwaukee Hospital, April 8th, 1903.

The Committee on Surgery reported that the subject of Hernia would be considered at this meeting. Dr. N. Edward Hausmann, of Kewaskum, read a paper on "Etiology and Pathology"; Dr. G. H. Fellmann, of Milwaukee, on "Varieties and Symptomatology"; Dr. W. M. Mackie on "Treatment."

The committee on subject for discussion reported as follows: "The Importance of early Diagnosis of Tuberculosis and the Treatment of the Disease in the Incipient Stage." Dr. H. Philler, of Waukesha, spoke on "Diagnosis, Pathology and Symptomatology"; Dr. Harrington, of Milwaukee, on "Management of the Disease by the Government."

The subject was very thoroughly discussed by the members present.

Dr. Heidner, of West Bend, Wis., presented a case of tuberculosis for diagnosis. Dr. Mishoff, of Milwaukee, presented a pathological specimen removed from a uterus by electricity. The specimen is probably of a fibroid nature. Dr. Sifton, of Milwaukee, presented very beautiful anatomical specimens of the human body: two cross sections of the abdomen and one of the neck.

The following members were present at the meeting: Drs. Hugo Philler, Waukesha; Hausmann, Kewaskum; Wehle and Heidner, West Bend; Juergens, Fredonia; Hoffman, Campbellsport; Scott, Port Washington; J. P. Stove, Theresa; H. Blank, Jackson; G. A. White, Chas. Stoddard, T. C. Malone, T. L. Harrington, C. F. Faber, G. H. Fellmann, W. M. Mackie, Kaumheimer, Mischoff, Nielson, Sifton, Shearer.

The next annual meeting will be held on the second Wednesday of July, 1903.

FOX RIVER VALLEY MEDICAL SOCIETY.

Meeting of April 21, 1903.

The Fox River Valley Medical Society met in regular quarterly session at the Sherman House, at Appleton, Wis., and was called to order at 1:30 p. m., by the President, Dr. P. J. Noer, of Menominee, Mich. Thirty-seven members were present. Applications for membership were received from Drs. J. R. Scott and E. H. Brooks, of Apple-

ton, and they were, on motion, admitted to membership into the society.

A paper was read by Dr. G. M. Steele, of Oshkosh, Wis., on "Pneumonia." The paper was confined to a general outline of the subject, with special remarks on the third stage and its complications and treatment. The fact that the mortality in pneumonia is still high in spite of recent therapeutic advance, was alluded to, and the question of the contagious character of the disease was raised, and the conclusion reached that strict isolation is not at present necessary. In 80 per cent. of cases of pneumonia the diplococcus occurs, and it has been found in blood and in all exudations. Streptococcus pyogenes, staphylococcus aureus, typhoid, influenza and the Friedländer bacillus are all to be found at times. No one bacillus or coccus is found as a necessary and constant causative factor. During the third stage a very high temperature should make us suspect gangrene or abscess.

Pneumonia is not always typical. It is important to bear in mind that serious and infectious conditions can develop by way of the lungs without lung symptoms. As to treatment, antiseptic remedies have so far proved disappointing. Creosotal is one of our best remedies, venesection in selected cases is very valuable. Baths, packs and mustard applications, etc., have little value. Hot poultices should be avoided. The strength of the patient should be carefully conserved, strychnine, carbonate of ammonia and digitalis being our best remedies. Opium should be used carefully, if at all.

Veratum viride is an extremely valuable remedy, preferably Norwood's tincture. To avoid nausea and vomiting it may be given in a weak saline solution. It may be used at any age, and cases can undoubtedly be aborted with its help. Three drops every three hours may be given, or drop doses hourly, increasing if necessary. The pulse is to be kept at 90 and the temperature at 102°. Lower pulse and temperature are not desirable if brought about by the use of drugs.

This paper was very freely discussed and a great variety of opinion expressed. Several members developed therapeutic nihilism, believing that most of the drugs mentioned could only be used in such small doses as to do no good whatever, while large doses would undoubtedly do harm..

This view was opposed by others, who quoted the highest authorities for the use of such drugs as veratrum viride, and even opium and coal-tar derivatives found a place. The importance of treating the toxemia rather than the mechanical difficulties was emphasized. In conclusion Dr. Steele fully defended his views on treatment.

A paper was read by Dr. W. E. Fairfield, of Green Bay, Wis., on

"Bronchitis and Allied Affections." Bronchitis, without complications, is rarely fatal, and the writer expressed incredulity in the statistics of Great Britain attributing 1,300 deaths per million inhabitants annually to bronchitis. Many cases begin as bronchitis and later develop into bronchial pneumonia, which may not be recognized. As to treatment, expectorants are of no value. Venesection will sometimes prevent pneumonia as a sequel. Counter-irritants on both front and back of the chest are valuable.

Oil of wintergreen as an application is very valuable, and a brisk saline laxative and hot foot baths are remedies designed to increase the action of the skin, and will frequently cut short an acute attack.

Acetanilid and Caffeine Citrate in a proportion of four grains of the former and one of the latter is a useful combination.

Inhalations are useful in the early stages, especially Tincture of Benzoin Compound. For pain, codein gr. ¼ every two or three hours. No cough mixtures, pure air at an even temperature.

In obstinate cases the cause should be carefully looked into. Asthma, rheumatism, etc., frequently aggravate the disease.

A paper was read by Dr. Levings on "Surgical Treatment of Diseases of the Chest." Great care in diagnosing is necessary, with repeated and thorough examination of the chest. In abscesses or gangrene dulness is more often found in the upper part of the lung, surrounded by an area of râles. Then come symptoms of a cavity; sometimes a cavity filled with pus will give a dull note on percussion, and after a violent cough and expectoration, air will enter this cavity and the percussion note will suddenly become tympanitic.

In cases of pneumonia in which the disease does not terminate as expected, we may often look for abscess, especially if the dulness changes its location as the patient changes his position. The presence of elastic fibres in the expectoration is pathognomonic. As to treatment: small abscesses that drain through a large bronchus may usually be left alone. In operating it is not often expedient to try to stitch the two pleural surfaces together, as is sometimes recommended. A dam may be built around the infected area, as is done in appendix operations. Gangrene is far more serious than abscess, and is more apt to develop in debilitated patients.

There is no characteristic symptom until the unmistakable fetor is noticed. Often this will develop suddenly, and the sputum can then be divided into three characteristic layers, frothy on top, a brown liquid in the middle, and a heavy sediment at the bottom.

Mild cases may be treated expectantly, but these are very rare. In

draining gangrene cavities, pack with iodoform gauze rather than introduce drainage tubes.

As to irrigation, although condemned by many writers, the author has used it constantly and with satisfactory results.

JAMES S. REEVE, SECRETARY.

MEDICAL SOCIETY OF MILWAUKEE COUNTY.

The annual meeting was held in the Milwaukee Medical Society rooms, Goldsmith Building, April 10, 1903. Twenty-six new members were elected, bringing the total up to 145.

The following were elected to hold office until Dec. 31, 1903: President, H. M. Brown; vice-president, G. E. Seaman; treasurer, Joseph Kahn; secretary, A. W. Gray. A. B. Farnham was re-elected censor.

Reorganization was completed by adopting a constitution and by-laws in conformity with those recommended by the American Medical Association.

The next regular meeting will be held May 8 next, but will probably be adjourned until May 15, so as not to conflict with the date of the A. M. A. meeting in New Orleans.

LA CROSSE COUNTY MEDICAL SOCIETY.

The Society met on April 2d at the new La Crosse Club rooms. A paper was read by Dr. F. C. Suitar on "Surgical Emergency." A general discussion followed. Attorney E. C. Higbee was present and spoke upon the legal aspect of this question.

BROWN COUNTY MEDICAL SOCIETY.

At a meeting held on April 2d at the residence of Dr. B. C. Brett, Green Bay, the committee on revision of the Constitution and By-laws appointed at a previous meeting, reported favorably upon the adoption of the Constitution and By-laws recommended by the A. M. A. for County Societies. The committee report was adopted unanimously, and a delegate chosen to represent the Society at the meeting of the Wisconsin State Society in June next. The Secretary was also instructed to apply to the State Society for a charter. This County Society now has a membership of about twenty-five.

UNITED STATES PENSION EXAMINING SURGEONS.

The following interesting program has been prepared for the Second Annual Meeting of the National Association of United States Pension Examining Surgeons, at Washington, D. C., May 13-14, 1903:

1. Address of Welcome.....Hon. E. F. Ware
   Commissioner of Pensions.
2. Rheumatoid Affections Considered as Pensionable Disabilities..
   .....P. Y. Eisenberg, M. D., Norristown, Pa.
3. Physical Signs of the Heart: How Detected and How Described..
   .....C. W. S. Frost, M. D., Waterbury, Conn.
4. The Etiology of Some Pensioned Disabilities Measured by Modern Pathology.....W. T. Sarles, M. D., Sparta, Wis.
5. Diseases of the Respiratory Tract.....
   .....W. Warren Potter, M. D., Buffalo, N. Y.
6. Address.....Sam Houston, M. D., Washington, D. C.
(By Invitation.) Medical Referee, Bureau of Pensions.
7. Insanity in Connection with the Service in the Phillippine Islands
   .....Ernest F. Robinson, M. D., Kansas City, Mo.
(By Invitation.) Surgeon, U. S. Navy.
8. A Cursory Survey of the Pension Examiner's Work.....
   .....G. Law, M. D., Greeley, Col.
9. Hints to the General Board Surgeon on Eye and Ear Examinations
   ..... J. O. Stillson, M. D., Indianapolis, Ind.
10. Diagnosis of Malaria and its Sequelæ.....
    .....John C. Hemmeter, M. D., Baltimore, Md.
    (By Invitation.) Director Clinical Laboratory, University of Maryland.
11. Insanity as a Result of Physical Conditions.....
    .....A. B. Richardson, M. D., Washington, D. C.
    (By Invitaion.) Sup't Government Hospital for the Insane.
12. President's Address.....William A. Howe, M. D., Phelps, N. Y.

PHILADELPHIA OBSTETRICAL SOCIETY.

Meeting of March 5, 1903.

The President, Dr. J. M. Fisher, in the Chair.

Dr. L. J. Hammond reported the following case:

A CASE OF POST-OPERATIVE TETANUS WITH ESPECIAL REFERENCE TO THE FOCUS OF INFECTION.

The case is that of a female 22 years of age, the daughter of a farmer, whose duties in addition to household work, included milking cows, feeding pigs and attending to chickens. Previous to her arrival in Philadelphia she had suffered from an attack of (gonorrheal?)

peritonitis. Three days after her arrival in the city, the patient complained of toothache and swelling in the left cheek, due to eleven carious teeth. This attack terminated in an alveolar abscess, which was incised and cleansed of a considerable quantity of pus. Two days after this had healed, an abdominal section was done for a bilateral pyosalpinx, ovarian abscess on one side, and a multiple cystic ovary upon the other. The abcess sacs were removed without rupture. The patient progressed very well until the sixth day when she complained of strange feelings about the eyes. Four hours subsequently she complained of an intensity of this ocular condition with stiffness of the jaws. Dr. Hammond saw her within an hour after the latter was noted, and found the patient presenting a risus sardonicus. The abdominal incision was examined and found united without any irritation. Trismus grew rapidly worse and in five hours after he saw her it was impossible to separate the jaws, and at the end of two more hours the muscles of the neck were all completely spastic. No other muscles were spastic until about four hours previous to death (which occurred 27 hours after the first symptoms were noted) when there was noticeable contraction of the muscles of the back and abdomen during the paroxysms only. Morphia, eserine, bromides, chloral and the tetanus antitoxin were all employed. Owing to the tightly closed mouth a culture could not be obtained from the teeth cavities, hence a positive bacteriological proof of tetanus could not be obtained, but the knowledge of the habitat of the tetanus bacillus, and the mode of life of this farmer girl, would tend to convince one that she had become infected with tetanus germ at her home, and that the extensive caries of the teeth should furnish a most vulnerable storehouse for its concealment. As the period of incubation of tetanus is nine to twenty-one days, the germ could not have been introduced at the time of operation.

Discussion.

DR. JOSEPH SAILER: Some years ago during a course in bacteriology at the Pasteur Institute, I was much impressed by a remark made by Roux upon the treatment of tetanus by an antitoxic serum, that there were two classes of cases; the chronic, all of which recovered, and the acute, none of which recovered.

When Dr. Hammond asked me to see this case he had given a million units of the antitoxic serum, and I felt that there was really very little more to be done. My experience is that Roux's remark regarding recovery is pretty nearly true; that is to say; chronic cases recover rapidly under any treatment, and other cases, no matter how early the treatment is instituted or how vigorously carried out, die inevitably. Of course, the most important thing one can do under these circumstances is to arrive at some conclusion in the early stages as to whether there is any likelihood that a case will get well. There is an old rule regarding tetanus, that if the symptoms commence in the upper part of the body, particularly in the head, the prognosis is grave. If they commence in the lower part of the body, the prognosis is very much more favorable. It is easy to theorize why this should be so. If the lesion is in the lower part of the body the toxine reaches the less vital centers of the

spinal cord and there is a progressive although very slow immunization of the nervous system, so that by the time it reaches the upper portion the nerve cells are able to resist injurious influences. So far as I know there is no evidence that such a theory has any actual basis of truth.

Of course the question of the treatment of tetanus is a most alluring one. The antitoxine is such a trustworthy antidote to the tetanus toxine that Ehrlich and Morgenroth could work out their theories of immunity with mathematical values; which is difficult with antitoxines of many other organisms. It would seeem, therefore, that if there is any disease in which antitoxine ought to be efficient it is this one of tetanus. Yet, excepting in the case of some of the smaller animals whose bodies can be thoroughly saturated with antitoxine, even experimentally it has no curative power, for the reason that the toxines are united with the cells by intermediary bodies and form combinations that cannot be neutralized by the antitoxine as the toxines in the blood are neutralized by the antitoxine of diphtheria.

In regard to Dr. Hammond's case, when I saw it, the symptoms were most pronounced in the face, and the entire appearance of the patient formed a most typical clinical picture. Even at that time I was compelled much against my will to look upon the prognosis as hopeless because the patient was beginning to have cramp of the respiratory muscles. The sensation of a binding around the chest is a characteristic symptom and almost the gravest met with in traumatic tetanus; and indicates that the fatal outcome cannot be long delayed. The tetanus bacillus stays in the original wound without multiplying, and liberates a toxine that travels along the nerve sheaths to the parts of the central nervous system from which the influences which move special muscles arise. As the peripheral neurons are the parts first affected they appear to be also the parts in which the symptoms are first manifested. The fact that this patient's symptoms began in the eye and extended to the face led me to suspect some other focus of infection than the abdominal wound, and it seems probable that there was infection in the jaw. Cultures would not have been of much value. A few investigators have been able to obtain the tetanus bacillus from the original wound. In one case the bacillus was said to have been obtained from the neighboring lymph glands. But the majority of observers, no matter how carefully investigations were undertaken, have been unable to find it, and for pretty obvious reasons. It does not multiply. It appears in small numbers and usually is a rather difficult germ to grow.

It is hardly worth while to mention that there is probably no germ more difficult to destroy than the tetanus bacillus. It is more difficult than the anthrax because it is anaerobic and it fails to grow in the intervals of fractional sterilization, unless put under anaerobic conditions. The spores can be boiled for 24 hours without being destroyed. A few instances of aerobic tetanus bacilli have been described. I think if methods could be adopted by which the tetanus bacilli could be killed all further measures would be unnecessary because no other organism can resist the condition required to destroy it. I have been interested in the gelatine treatment of hemorrhage. In going over the literature it is surprising to find how frequently patients injected with gelatine for checking hemorrhages have died of tetanus. Some five or six cases are now on record. The reason is that the tetanus bacillus in gelatine media cannot always be gotten rid of by boiling at intervals. I

can only agree with Dr. Hammond in his idea of the case that it was an infection probably carried with the patient from her home and lodged in the tooth. I should be rather inclined to differ with him in his view that the depressed state of the patient had promoted the infection. I should rather think that perhaps the latent focus had been aroused by the suppuration in the jaw, or even by the operation upon it.

DR. F. C. HAMMOND: Coe, of New York, in 1901 reported two cases of tetanus following aseptic celiotomy. One case was similar to the case reported by Dr. Hammond as regards the pelvic condition, bilateral pyosalpinx (gonorrheal). In this case tetanus developed during the latter part of the third week. The patient had progressed so well from the operation that she was permitted to lie upon a couch on the sixteenth day. On the twenty-fourth day, while around the ward, her legs "gave way," precipitating her to the floor. For a few days previous there had been some difficulty in swallowing, and stiffness of the muscles of the neck. Owing to her known hysterical nature these were considered of a hysterical character. Subsequently sufficient symptoms developed to warrant a diagnosis of tetanus. The patient died on the thirty-sixth day after the operation and the twentieth after the appearance of the initial symptoms. In the second case stiffness of the muscles appeared on the ninth day, and the patient felt inclined to be hysterical. A diagnosis of hysteria was made. On the next day marked tetanic symptoms appeared, and the patient succumbed on the eleventh day after the operation. In both cases an early diagnosis of hysteria was made, which was verified by a consultant. The diagnosis of tetanus was not made in either case until trismus had developed. It hardly seems possible in the modern day of aseptic and antiseptic surgery, that we should look for tetanus as a complication of abdominal section.

DR. H. D. BEYEA: I would like to ask Dr. Hammond to what extent and how the water used in this operation was sterilized. In a plastic operation, cervix and perineum, performed by Dr. Penrose in a private house a few years ago tetanus developed and resulted in death. The nurse in attendance, not accustomed to prepare for such an operation, it was found had not properly prepared the water. It had been taken from a well after a storm, and was muddy. This was observed when it was too late to resterilize the water, and therefore mercuric chloride was added. There seemed to be no question of doubt but that the water was the source of the infection in this case. Shortly afterward there occurred at the University Maternity two or three cases of tetanus with the same result. It was discovered that the water used for douching was taken from the tap and prepared by adding mercuric chloride. The infection here was positively traced to the water. It would seem to me that since the tetanus bacillus is so frequently found in water, that unless the water is sterilized by fractional sterilization, boiled for at least two hours on two consecutive days, or sterilized in the Sprague-Schuyler sterilizer under fifteen pounds pressure, we should look to the water as the probable source of infection. Aside from catgut it is practically the only source of infection in abdominal technique.

DR. B. C. HIRST: The cases that occurred in the University Maternity were three in number, and all due to the water of intrauterine douches, I am sure. We had at that time a resident physician who conceived the idea that

every woman's womb must be washed out after labor. Every unfortunate woman had an intrauterine douche whether there were any complications or not, and three died of tetanus. We had the water examined after the first case, and in the sediment collected from the tap water there were demonstrated the bacilli of malignant edema and of tetanus. Animals injected with the bacilli died, some of malignant edema and some of tetanus. We had boiled the water, but we immediately installed a Sprague-Schuyler sterilizer, the first, I believe, in the University Hospital.

It is a curious fact that the mistake should be made so often of mistaking tetanus for hysteria. I have seen three cases in which this mistake was made at different times, in different localities, and each by a different consultant.

DR. HAMMOND closes: I thank the gentlemen very much for the discussion, which has amounted to so much more than the paper that I have learned a great deal from what I felt to be a very uninteresting subject.

I took advantage of the suggestion made by Dr. Sailer as to the prevention of any subsequent cases of tetanus by first cleansing the entire institution with 1-500 bichloride solution and liberated two tanks of oxygen in each room with the hope that pure air might contribute something toward preventing such condition. I never before had a case of tetanus and have not since. In the same week there were four major operations in the same institution, and the water that was used was first filtered and then boiled 18 minutes. So it seems to me improbable that the infection was in the water. If so, we would have heard something more of it in the other cases, all of which were prepared in precisely the same way, both as regards the water and instruments. The case directed itself so clearly toward the teeth as the focus that I have learned the lesson that whenever I have a patient from the country districts, the first thing I expect to do, and for which I shall accuse myself of negligence, if I do not do, is to inspect the teeth, having any carious teeth looked after before operation. In answer to Dr. Beyea's question, I can but repeat that it seems highly improbable that the germ was in the water. I do not think in this case there was any possibility of mistaking the diagnosis for that of hysteria. Hysteria never entered my mind. The lectures I heard when a student so impressed me, especially in regard to the peculiar expression (risus sardonicus) that from the appearance of this in my patient I felt no doubt as to diagnosis.

BIRTH PALSIES.

Dr. M. H. Bochroch read a paper on "Birth Palsies," which was in substance as follows:

The obstetrician does not always take into consideration the accidents to the child which so frequently eventuate in serious and permanent palsies. These injuries are not always evident at birth; very frequently they do not receive attention until years after, and then at the hands of a neurologist whose function is usually limited to making the diagnosis of a permanent and hopeless lesion. Birth palsies occur more frequently in the practice of the general practitioner than in the hospitals and wards attended by professional obstetricians.

In brain lesions such as hemiplegias, microcephaly, porencephaly and hydrocephalus, forceps are as a rule used too late rather than too soon; that prolonged pressure such as occurs in primiparæ, is more often the cause of this deplorable state than the improper use of the forceps. In cases of cerebral hemiplegia or cerebral diplegia the most that can be accomplished is a tedious and only partially successful attempt at education, and some training of the paralyzed limbs. It would seem that if in every child in whom at birth there are present symptoms of asphyxiation following dystochia and in whom there has been prolonged pressure and constriction of the head, it would be a justifiable procedure to rapidly make an opening of moderate size upon either side of the parietal region; by such a procedure the effused blood escapes, or could be washed out with a normal salt solution. Erb's palsy is detailed, stress being laid upon the avoidance of the various procedures which predispose to this condition. The treatment of brachial palsy resolves itself into the employment of massage and electricity. The paralyzed arm should not be allowed to hang helplessly by the side, but should be supported in a sling or in a Velpeau bandage. In some of these cases nerve suturing may be indicated.

Discussion.

DR. GEORGE M. BOYD: I have been fortunate enough not to meet with any of the palsies seen as the result of difficult forceps operation. I have never met with a case of brachial palsy. The Doctor speaks of prolonged labor superinducing the palsies rather than the labor assisted by forceps interference. It seems to me that very many of the injuries that we meet with, and possibly the great number of asphyxias and foetal deaths are due to too early interference, injudicious or faulty use of the forceps.

DR. STRICKER COLES: I have been so unfortunate as to have one case of palsy of the arm in difficult labor. The shoulders were very difficult to deliver, and twenty minutes were used in making traction. I thought at one time I would not be able to deliver them at all. It was a typical case of palsy as described by Dr. Bochroch. I heard occasionally from the child, and at one time that she was at the Polyclinic Hospital, where it was thought to make an X-ray picture, thinking the palsy was due to displacement. This was refused, and the last I heard of the patient was that she had diphtheria and died.

The only other form I have known of is facial paralysis occipito-posterior delivery with forceps. The paralysis disappeared in five or six days and I have seen no bad results following the paralysis.

DR. L. J. HAMMOND: I have been very much interested in the surgical treatment of peripheral nerve injuries, and my feeling is that in this unfortunate condition we have a lesion justifying surgical treatment. As Dr. Bochroch has said, we have the condition due either to extravasation of blood from rupture of the venous plexus which surrounds the cord (extra-durally) or we have inflammatory lymph deposited within the sheath itself. If this be correct, it seems to me that we have in operation a relief that should be undertaken in cases that do not respond to the routine medical treatment within a reasonable period. If operation is delayed until nutritive changes

take place, it is probable that nothing can be done. I would like to hear from Dr. Bochroch regarding results of treatment.

DR. W. S. STEWART: I would like to call the attention of the Society to another form of palsy which we might find on investigation. I presume that most of the members of this Society do not believe in maternal impressions. I have had in my experience a case resembling that described by the reader of the paper, but which I could trace back to maternal impressions. The child's left arm was paralyzed and hung at its side. The mother was disposed to accuse me of injuring it in her delivery. Professor D. Hayes Agnew was consulted, and said that there was nothing to indicate that the child had been injured in delivery. I inquired of the mother whether she had been disturbed in any manner by seeing a person with a similar condition. She at first said no. Then she replied, except that a man had sat opposite her at her table who had no use of one arm. I told her I believed that to be the cause of the child's condition, and that it would be well to try electricity. I did not believe the condition would ever improve. That child, unfortunately, did not die as in the case mentioned, and is living to-day with the same condition unhelped by various treatments and numerous doctors. I had another case which occurred with a woman sitting opposite a man at their meals with a glass eye. When her child was born it had a corresponding sightless eye. In another case a pregnant mother gave birth to a child that had constant movement similar to chorea, and I learned that the mother, while carrying the child, was riding in a street car with a woman whose child was choreic. I could give you many other cases without doubt results of maternal impressions. While this Society may not feel much interested in this subject, I think it is often well to trace such occurrences to the true source.

DR. E. P. BERNARDY: There is no doubt that a prolonged labor can cause serious brain lesion to the newborn child, the excessive overlapping of the parietal bones causing rupture of the blood vessels and injuring the delicate coverings of the brain, but the true cause of many brain lesions, especially those of late appearance, are caused mostly by the injuries occasioned by misapplied forceps. While the forceps are all saving both to mother and child, it is a well-known fact that they can become the reverse.

In an experience of nearly five thousand confinements, I can hardly recall a case injured by a prolonged labor, where forceps were not applied. In my earlier obstetrical practice the application of forceps was one in about five cases, while at the present it is one in about fifty or a hundred confinements.

In an article which I published upon the Use and Abuse of the Obstetrical Forceps, the statistics showed that in America the forceps was applied in every fifteen confinements. Therefore, I cannot believe that these injuries are produced from lack of the use of the forceps.

DR. F. C. HAMMOND: Regarding Duchenne's paralysis the experiments of Stolper conclusively prove that the plexus cannot be compressed by the tips of the forceps so long as the child presents by the vertex, although it may occur in face and brow presentations. Dr. F. X. Dercum states that he has never seen a case of palsy cerebral in origin occur in a multipara. From the standpoint of prophylaxis it would be well to apply forceps just as soon as the fetal head fails to recede between the pains.

DR. BOCHROCH closes: Regarding Dr. F. C. Hammond's remarks I cannot go into details concerning in what particular presentation the forceps do the

most damage. It is well to remember Erb's point high up on the neck the site of the origin of brachial palsy and that if the forceps lie over too far palsies may be made in that way. In some literature it is shown that the sole cause of palsies is that the forceps are put on in a bungling fashion, pressing on Erb's point. It is a very curious fact that facial palsies usually disappear in two or three days. I mentioned in my paper that nerve suturing might be resorted to. I am not, however, familiar with a case in which it has been done. Nerve suturing is receiving considerable attention from the surgeons, and they will have to decide that question.

I think Dr. Bernardy did not understand me; I tried to make clear that it was the want of proper use of the forceps rather than the early use which caused injuries. The fact that the forceps are not used early enough, and prolonged pressure permitted, especially in primiparæ is, I think, the frequent cause of the palsies encountered.

BOOK REVIEWS.

DISEASES OF THE SKIN. THEIR DESCRIPTION, PATHOLOGY, DIAGNOSIS AND TREATMENT, WITH SPECIAL REFERENCE TO THE SKIN ERUPTIONS OF CHILDREN, AND AN ANALYSIS OF FIFTEEN THOUSAND CASES OF SKIN DISEASE. By *H. Radcliffe-Crocker,* M. D. (Lond.) F. R. C. P. Third edition, revised and enlarged. P. Blakiston's Son & Co., Philadelphia, 1903.

It is with great pleasure that I have perused this, the latest edition of a book that has always stood for a model of conciseness and fairness of view in the elaboration of this difficult field of work.

There has been so much new material added to the old work, necessitated partly by the advance and new view-points opened in the science of dermatology, and partly by the revision and expansion of the older topics, as to make the new edition larger by 500 pages than the previous one. Still the price of the book remains the same.

Crocker seems to have no hobbies or pet theories, but gives every subject the attention which its importance demands, giving a clear and systematic exposé of all the matter contained in the field, and at the same time giving all due notice and appreciation to the collaborators in dermatology, so that the feeling of thorough satisfaction remains after perusing the work. No one interested in the study of dermatology whether student or practitioner, should be without it. (L. S.)

CURRENT LITERATURE.

MEDICINE.

W. H. Washburn, M.D., Jos. Kahn, M.D., O. H. Foerster, M.D., L. F. Jermain, M.D.

Salicylate of Soda in the Treatment of Basedow's Disease.—CHARLES GILBERT CHADDOCK, of St. Louis (*Journal Am. Med. Assoc.*, April 18th, 1903) contributes a clinical report on the treatment of Basedow's disease with sodium salicylate. The number of cases treated is limited, but the results are so striking that they are worthy of record and give some ground for hope that in this drug will be found valuable aid in the management of this obstinate and intractable disease.

Babinski, of Paris, has reported favorable results from this line of treatment, though he employed the drug in much larger doses than Chaddock has found effective.

In the cases reported the improvement was noted in all the cardinal symptoms of the disease, exophthalmos, tachycardia, goitre and nervous symptoms, and this improvement was very prompt and in the cases reported has been permanent.

The drug was given in doses of ten grains three times daily, though these doses may be exceeded in case improvement should fail to occur.

The precautions to be observed in the administration of sodium salicylate are: Care in obtaining a pure salt, observation of the functions of the kidneys, avoidance of gastric irritation. Chaddock does not theorize as to the manner in which this therapeutic agent effects such favorable influence upon the course of this disease. (W. H. W.)

Case of Bubonic Plague.—Sporadic cases of bubonic plague have occurred among the Hawaiians for several years, and now that such intimate communication exists with the United States the danger of their being carried to our own shores is very great. JUDSON DALAND (*American Medicine*, April 4, 1903) reports having assisted at an autopsy in a case of plague in Honolulu. The body was still warm, and the thermometer placed in the center of the spleen registered a temperature of 109° F. The only enlarged glands found were in the right axilla and left inguino-femoral region. They contained numerous plague bacilli. The spleen was also enlarged. An autopsy of a rat found in the house in which the deceased lived revealed no enlargement of spleen or glands.

"In most cases of plague that have occurred in Hawaii, the clinical diagnosis is based upon the existence of fever, adynamia, delirium, and enlarged lymphatic glands, and the existence of an endemic or epidemic in the community. The diagnosis is considered to be established when the plague bacillus is discovered in the liquid removed from an enlarged gland by means of the Pravaz syringe, or when found in the urine, sputum or feces. The cultural peculiarities are considered diagnostic, and the successful inoculation

of mice, rats, or guinea pigs often establishes the existence of the disease in doubtful cases. The mortality among the natives of Hawaii is very great, and all the cases thus far reported have been fatal, but it is probable that in many of the milder cases the patients recover without having been reported to the Board of Health.

"The prognosis is particularly unfavorable when the plague bacillus is found in the blood, especially if the number of bacilli are greater in each succeeding examination. When a number of bacilli are included within the leukocytes in the fluid obtained from a bubo, the prognosis is considered to be more favorable."

Dr. Daland exhibited a smear preparation from the enlarged inquinal gland. (O. H. F.)

Leprosy.—JUDSON DALAND of Philadelphia (*Medical Bulletin*, Feb., 1903) gives an interesting account of observations made. In Japan it is supposed that as many as 30,000 or more cases exist, and most of the natives and physicians think the disease contagious. A form of treatment supposed to influence the disease is the following: "The diseased skin is rubbed with pumice stone until blood appears, and a 20 per cent. salicylic acid lanolin-vaselin is then applied. As much as a square foot of the skin surface may be so treated without producing symptoms of salicylic-acid poisoning. This treatment alone is sometimes successful in relieving mild cases of macular leprosy. Three ½-gramme capsules of oleum gynocardia are to be taken thrice daily after meals. Every fourth day an additional capsule is given after each meal until ten capsules are taken thrice daily. This treatment should be continued for not less than one year." The Kausatsu Spring baths aid also.

In Iceland there are also a number of lepers, the poor hygienic and climatic conditions under which the inhabitants suffer, seemingly favoring the propagation of the disease.

Daland writes that Norway is the only European country in which the disease is epidemic, but owing to the enforcement of segregation, this disease is rapidly disappearing.

Excellent photographs illustrating the leonine expression of the face in leprosy, the anesthetic and tubercular forms, and plantar ulcers, accompany the article. (O. H. F.)

The Treatment of Typhoid Fever with Acetozone.—FREDERICK G. HARRIS of Chicago (*Therapeutic Gazette*, March, 1903) details his experience with acetozone in the treatment of 128 cases of typhoid fever at the Cook County Hospital. Of the whole series of 128 cases, 117, 91.4 per cent. made good recoveries, while 11 or 8.59 per cent. died. The average duration of the fever after the administration of acetozone was begun, was 18 days in the 117 recovered cases.

The average duration of the fever from onset to permanent normal temperature in 111 cases was 29.37 days. Under the acetozone treatment in favorable cases (seen early) the duration of the disease was materially shortened

and the most disagreeable symptoms ameliorated. The typhoid fetor of the stools and the peculiar odor of the wards containing typhoid patients were greatly lessened. The stupor and delirium was very much less, tympanites less frequent, and diarrhea was checked. Those patients who were given the drug early, often and regularly, showed the best results of this treatment. "What Virchow calls the 'brutal force of figures' cannot but convince any one that acetozone lowers the temperature, shortens the duration of the fever, and lessens its toxic symptoms more than our better known treatments." Harris believes that where large amounts of acetozone are given to typhoid patients during the first week of the illness, assisted by gentle laxatives, the temperature will return to the normal in from ten to twelve days.

(L. F. J.)

Angina Pectoris—A Criticism and a Hypothesis.—COLBECK (*Lancet*, March 21, 1903) believes that all the theories advanced to explain the causation of the symptoms of angina pectoris are faulty.

Atheroma of the coronary arteries and degeneration of the heart muscle, irregularly distributed over the heart wall, are generally admitted to be present in angina. The ganglia and nerve fibres probably suffer equally with the muscular tissue. When the work of the heart is increased either by exertion or emotion, the diseased coronary arteries are unable to furnish the increased demand for blood to the degenerated areas, which are therefore unable to take their proper share in resisting the increased intracardiac tension, and in consequence undergo more or less distension and stretching. These degenerated patches contain nervous tissue in an unduly impressionable and irritable condition which must undergo the same stretching and tension, and thus explain the pain experienced.

As the localized stretching and distension take place during systole the ventricular walls are simultaneously undergoing contraction and expansion, thus sending contradictory and antagonistic efferent impulses to the cardiac center. The turmoil produced in this important center probably explains the sensation of impending death. This perturbation spreading to adjacent centers may explain the vasomotor phenomena as well as the nausea and other symptoms that commonly accompany the anginal paroxysm. (J. K.)

Late Systolic Mitral Murmurs.—J. N. HALL of Denver, Colo. (*Am. Journal Med. Sciences*, April, 1903) reports a case of this kind. The apex beat was displaced to the left, and a systolic murmur, with maximum intensity in the mitral area, was heard. This murmur was transmitted three inches to the left and slightly in other directions. The peculiarity of this murmur was that it began abruptly after the apex beat and first sound, and terminated just before the second sound. H. refers to three similar cases reported in the Am. Journal of the Med. Sciences in September, 1892, by J. P. C. Griffith, and does not accept the explanation there given as to the mechanism of the production of these murmurs. Griffith thought that in these cases the regurgitation in reality lasted throughout the systolic period, or nearly all of

it, but for some unknown reason became audible only during the latter portion of it.

Hall concludes, after discussing some physiologic problems in connection with the circulation, that these murmurs are to be attributed to asynchronous ventricular contraction. Such abnormal action of the ventricles is not uncommon in the presence of increased blood pressure in either system. The right ventricle anticipates the contraction of the left in mitral disease, while the opposite often occurs when the systemic arterial pressure is abnormally high, as it commonly is in interstitial nephritis. (W. H. W.)

The Treatment of Diphtheria by Intravenous Administration of Antidiphtheritic Serum.—CAIRNS, of Glasgow, (*London Lancet*, Dec. 20, 1902) reports the results obtained by the intravenous injection of antidiphtheritic serum in cases of diphtheria. Twenty patients received this treatment, and Cairns, as the result of his observations, believes that where the infection is advanced or malignant this method of administration of antitoxine is to be preferred. He also advises the use of much larger doses of antitoxine than are ordinarily employed. Thus he states that his subcutaneous doses varied from 4,000 to 20,000 units, and intravenous from 20,000 to 35,000 units. No untoward results of the use of the serum developed in any case. The intravenous administration of antitoxine is advised in all malignant cases of diphtheria, and highly successful results are obtained even in those cases which appear from the first to be hopeless. (L. F. J.)

SURGERY.

F. E. Walbridge, M.D., H. A. Sifton, M.D., F. Shimonek, M.D.

The Question of Surgical Intervention in Cases of Injuries to the Spine.—JOHN CHADWICK OLIVER (*Annals of Surgery*, Feb., 1903) gives his views on the question of surgery of the spine following injury.

He classifies surgical opinion of the present into three groups. First: Those who advocate operation in every case in which symptoms are present indicating injury to the nervous system. Second: Those who advise no operation in any case. Third: Those who operate only in selected cases.

The importance in any case of injury to the spine is decided by the damage done to the nervous structures.

Nervous symptoms may be due to three causes: concussion, compression or destruction.

Concussion is largely a speculative term.

Compresssion may be caused by hemorrhage or pressure from bony fragments; when due to extravasated blood the probability of recovery is much better than when due to bony pressure.

Symptoms due to hemorrhage develop slowly and theoretically these cases should not be operated upon.

Oliver believes that when all the functions of the cord are abolished below the seat of injury no operation should be done. His plan is to wait

several days and if there is a return of function operate. He does not believe that continued pressure on the cord produces the bad results generally attributed to it.

Early operation is indicated in those cases in which there is evidence of some active function of the cord.

In cases where there is no function a delay of two or three days can do no harm. (F. E. W.)

Carcinoma of the Rectum.—Sir Charles Ball (*British Medical Journal*, March 7, 1903) contributes an extensive article on carcinoma of the rectum. Having in two previous articles taken up the history and diagnosis of this subject, he devotes the entire space to the technic of the various methods of surgical treatment. After detailing at great length the sacral route for removing growths which are low down in the rectum, he takes up and describes the abdominal method which has so recently come into vogue, although it had been done by Czerny 20 years ago. He advises an exaggerated Trendelenburg position so that the intestines may fall out of the pelvis and thus give plenty of room. In every case in which the anal canal is not involved, he thinks the pelvic colon should be brought down and attached to the lower segment of the gut. He believes that this is very much better than the formation of a lumbar anus. (H. A. S.)

The Anatomy and Surgery of the Temporal Bone.—A. E. Schmitt (*Amer. Journal of Med. Sci.*, April, 1903) contributes a very extensive article upon the anatomy of the temporal bone. The subject is taken up in the most minute detail and is illustrated by many cuts. After describing the anatomy, giving the superficial landmarks of all the structures of the temporal bone, the most explicit directions are given for exposing the important cavities in and about this region. This article is too extensive and technical to be abstracted in any moderate amount of space. The minute and clear description with most excellent and valuable cuts and detailed methods of performing all of the operations about this region make this paper a most valuable contribution to this subject. (H. A. S.)

The Surgical Treatment of Anuria.—Arthur Dean Bevan (*Annals of Surgery*, April, 1903) gives a very clear discussion of the subject after reporting a very interesting case. No urine had been passed for six days previous to operation. The left kidney was but a thin-walled sack containing 3 or 4 pints of fluid. Right kidney about twice its normal size. From his study of the subject he concludes that total suppression of urine may occur from the following causes:

1. From mechanical obstruction of the ureter of the single functionating kidney of an individual, the other kidney either being congenitally absent or destroyed by previous disease.

2. From mechanical obstruction of one ureter in an individual possessing two functionating kidneys, with increased intrarenal pressure on the obstructed

side, which by reflex nerve action prevents the unobstructed kidney from functionating, the so-called reflex anuria. Or, possibly, after a nephrectomy the involvement of the nerves in the pedicle may produce a reflex anuria.

3. From trauma of both kidneys, which, for a time or until fatal issue, is followed by complete cessation of function; also from trauma of a single kidney, which apparently by reflex action so affects the uninjured kidney that complete anuria results.

4. From acute nephritis, as sometimes seen in scarlet fever and other forms of septicemia.

5. From destruction of practically all kidney tissue as the result of such chronic lesions as tuberculosis, cystic degeneration, etc.

6. From certain poisons, as phosphorus, lead and turpentine, ether, chloroform, etc.

7. From the peculiar condition known as urethral fever, commonly the result of the passage of a catheter or sound.

8. In the polymorphous symptom-complex, known as hysteria, anuria may occur.

Bevan says anuria is a condition, not a disease, and he places it in the same class of surgical conditions as ileus.

He says: Such a condition is of special value from a clinical stand-point, because in the majority of cases, or at least in those cases in which interference holds out any prospects of relief, the anuria is the important overshadowing condition with which we have to deal. It is the condition which menaces the life of the patient. It is the condition which is evident even though the exact cause of obstruction may not be clear; and it is the condition which must be relieved in order to save the life of the patient. That operation is indicated in these cases is shown by statistics, seventy-five per cent. of the operated cases recovering while only twenty-five per cent. of unoperated survive. Bevan has formulated the following classification: First —Obstructive anuria. Second—Reflex or paralytic anuria. Third—Nonobstructive or nephritic anuria, (these are divided into several sub groups).

He calls attention to the fact that anuria and uremia should not be confounded, that uremia is not due simply to suppression of the urine as shown by the fact that cases of anuria live for two or three weeks while uremia as a rule causes death in three days.

If anuria is unrelieved uremia usually results. Bevan urges early operation especially in obstructive anuria, not later than two or three days. Nothing should be attempted except to give exit to the urine, or removal of stone if in the pelvis, at the first operation.

He believes that great intrarenal pressure in one kidney may cause a reflex anuria of the other in very rare cases. In cases of nephritic anuria, which until recently have been regarded as strictly medical, a nephrotomy or splitting the capsule may relieve congestion and the secretion be resumed. His conclusions are:

1. The clinical importance of recognizing the three forms of anuria—obstructive, reflex, and non-obstructive—is to be emphasized.

2. The imperative necessity of surgical interference in the obstructive and reflex forms, and its possible value in the non-obstructive cases.

3. That in the first two varieties, at least, a rapid nephrotomy on the side of pain, tenderness, and muscular rigidity is the operation of choice. If necessary, do not hesitate to make a double nephrotomy.

4. That nitrous-oxide anesthesia is probably to be preferred.

5. That time-consuming operations to relieve permanently the obstruction are to be postponed to a later period, after the patient has recovered from the anuria.

6. Operate early by the beginning of the third day. (F. E. W.)

Icterus.—DR. A. MERK (*Beiträge zur Path. u. Chirurg. d. Gallensteine. Inaugural Dissertation, Jena*, 1902) reports his experience in the association of icterus with gall stones.

Of 104 cases in which stones existed, icterus was present in only 30 per cent., while in 25 per cent. of icterus cases no stones could be found at operation. Icterus appears in a variety of shades, i. e. from a light yellow of the conjunctivæ to a brownish yellow of the entire body.

Icterus is either mechanical or functional in origin. The first is brought about by an obstruction of the ducts, the second is due to a disturbance of the function of the hepatic cells. It is therefore always hepatogenous. Mechanical icterus may be produced by a closure of the hepatic or common duct either directly—as by a stone, or indirectly—as by pressure from without.

The author describes functional icterus in the following manner: "The hepatic cells suffer a disturbance which makes them incapable of propelling the bile into the biliary capillaries, and therefore it is taken up by the blood."

Referring to the prognosis as indicated by the change of the icteric hue: if the original yellow or greenish-yellow be replaced by a yellowish-reddish-brown or brownish-yellow color, then mechanical icterus has been converted into the functional variety, and the prognosis becomes plainly much more unfavorable; while the function may be restored in several days after an operation, it is often however never resumed. (F. S.)

GYNECOLOGY AND OBSTETRICS.

A. W. Gray, M.D., Wm. Thorndike, M.D., E. W. Kellogg, M.D.

Phleboliths in Genital Organs of Women.—K. CZERWENKA (*Wiener klin. Woch.*, Jan. 8, 1903) describes the formation of phleboliths by the calcification of the whole or a part of an old thrombus in which the process of repair has started. Such phleboliths are to be found in all veins of the human system. Stasis with resulting varicosities and similar conditions favor their formation. He brings out the fact that the veins of the lower extremities and of the pelvis of women are liable to injury, especially during pregnancy and child-birth. Varicosities of the lower extremities and of the pelvis are for this reason very common in multiparae, but phleboliths of the female genital organs have rarely been reported. C. finds only one case, that of Kossman, reported,

and adds one of his own, as follows: A woman of 40 was admitted to St. Elizabeth's Hospital in Vienna for genital hemorrhages which had been going on for two weeks. Past history is negative except for a "running sore" on the foot three years previously. Physical examination gave moderately large varicose veins of the legs and thighs. The genital examination under an anesthetic, showed a chain of hard, firm nodules, of the size of a pea, in the lateral vaginal walls. These were not freely movable. They extended backward nearly to the middle line of the vagina and upward to the level of the middle of the cervix where they ran out into the lower part of the broad ligaments. Similar nodules were scattered through the soft parametrium. At the time of operation—a curettement—one of these nodules was removed and found to be a phlebolith of calcic carbonate and phosphate. As there were no phleboliths in the veins of the lower extremities nor in the internal spermatic vein, the author states that the disturbance was due not to a general but to a local pathological process; he thinks that an enlarged ovary may be the cause of venous stasis and later thrombus formation by pressure on the pelvic veins. Trauma during child-birth cannot be ruled out as a cause of such a condition, and inflammatory processes of the endometrium may be the causal factor in these changes in the veins. Microscopic examination of the uterine mucosa in this case showed a capillary dilatation which speaks for a stasis in the venous outflow; this he thinks was secondary to the formation of the phlebolith, the resulting disease being a hemorrhagic endometritis as a result of local stasis.

(It has been suggested to me that phleboliths in the pelvic veins might be mistaken in skiagraphs for ureteral stone.) (W. T.)

Rupture of Uterus During Labor.—J. B. DELEE (*American Journal of Obstetrics*, March, 1903) states that this accident is not as rare as generally believed, and reports ten cases from his own and consultation practice. In summing up treatment he divides it into that of complete and incomplete ruptures, the latter being those which extend to but not through the peritoneum. Incomplete ruptures are packed lightly with gauze, care being taken not to injure the peritoneum. Profuse hemorrhage may necessitate opening the abdomen and clamping the broad ligaments and vessels from above. Six methods of treatment of complete rupture are given: vaginal delivery, followed by expectant treatment or tamponade of the rent and the uterus, or sewing up the rent as far as possible and tamponade of the remainder or vaginal hysterectomy; laparotomy with removal of child, etc., followed by suture of the uterus or by partial or complete hysterectomy. Great care should be taken in moving a case of threatening rupture. (A. W. G.)

Eclampsia.—JOHN ASPELL (*American Journal of Obstetrics*, April, 1903) opens an article on "Constipation as an Etiological Factor in Eclampsia" with the statement, "We are still as much in the dark as far as the etiology of eclampsia is concerned as when we were students of medicine." He believes the liver to be the rock of offence.

SAMUEL W. BANDLER of New York (*American Journal of Obstetrics*, April, 1903) asks the question, "What is Eclampsia?" and gives a new answer. The article exhibits a profound study of the question, and its thirteen pages are so concisely written that they must be read to appreciate the new ground taken by the writer, viz., that the auto-intoxication is due not to uremia caused by pressure upon the ureters, kinking of the ureters, intra-abdominal pressure, edema or anemia of the brain, nor to intestinal fermentation, but to a pathological placental or ovarian secretion. The fault always lies, according to this theory, in a failure of these two secretions to properly antagonize each other. (E. W. K.)

NERVOUS AND MENTAL DISEASES.

Wm. F. Becker, M.D., Wm. F. Wegge, M.D.

Toxic Polyneuritis due to Sulphonal.—EBERSLOEH (*Deutsche Zeitschr. fuer Nervenheilkunde*, Vol. 23, p. 197), reports a case of toxic polyneuritis following the use of sulfonal (160 grs. in five days).

The patient, a woman aged 40 years, had been operated upon for carcinoma of the uterus, and on account of sleeplessness, was given moderate doses of sulfonal. The first symptoms developed five days after the first dose was given, and consisted of pain in the calves of the legs and muscular paralysis.

The paralysis was of the ascending variety, with the peculiarity that the hands and feet remained exempt for some time. Death occurred on the sixteenth day as a result of paralysis of the muscles of respiration.

There were no microscopic changes on post mortem examination of the nervous system.

On microscopic examination the changes noted were in many respects identical with those found in the toxic varieties of polyneuritis. They consisted in parenchymatous degeneration of the medullary sheath and of the axis cylinder. There were no changes in the ganglion cells of the anterior horns.

The author calls particular attention to the fact, that, although the clinical picture of neuritis of the brachial plexus was fully developed, none of the nerve trunks showed histological changes.

Similar conditions prevailed in the quadriceps and deltoid muscles, which were found to be apparently normal, though partial reaction of degeneration was present. (W. F. W.)

Child Study at Clark University.— G. STANLEY HALL. (*Am. Jour. Psych.*, Jan., 1903). This stupendous worker in the field of psychology concludes that child study is here to stay, notwithstanding the severe criticism dealt it from time to time. The *questionaire* method now about nine years old is the most fruitful. Over 100 *questionaires* have been issued, embracing such subjects as anger, crying and laughing, early sense of self, fears in childhood, tickling, fun, wit, humor, the only child in family, obedience and obstinacy, sense of humor among children, confessions, pity, the monthly period, feelings of adolescence, reactions to light and darkness, interest in flowers, superstition among children, the migratory impulse, truancy, running away, children's prayers, the collecting instinct, secret language of childhood, and many others.

A list of books and articles embracing over one hundred is given as the offspring of this study. In insanity, child study has furnished us new studies in Dementia Praecox; it has almost recreated the department of juvenile criminology; has furnished new methods of studying the most important problems of philology; almost recreated school hygiene; made adolescence, a strange word ten years ago, one of the most suggestive for both science and education.

A few able psychologists who still refuse to accept the results of child study, as Agassiz did evolution, will not escape the same kind of criticism meted out to him. (W. F. B.)

Child Study.— Somewhat along different lines is the study of children by Arthur MacDonald, of the Bureau of Education, just republished in a volume entitled "Hearing on the Bill, H. R. 14798, to Establish a Laboratory for the Study of the Criminal, Pauper and Defective Classes." A. MacDonald. In a study of 20,000 Washington school children, 16 per cent. of boys were abnormally dull and only 11 per cent. of girls. Children of American parentage were brighter than those of foreign. Children of the professional and mercantile classes were superior to those of the laboring. Boys were more lazy than girls—especially the boys of American parentage. Children of well-to-do parents are taller and heavier for their age than children of poor parents, due probably to the better food, light and air. Girls from 12 to 14 are taller and heavier than boys. The pubertal period is the time when girls are growing very fast and so need most of their vitality to adapt themselves to the new conditions. They should be free from care and work then more than at other times, but owing to house and school duties it is usually the reverse. It is said children learn evil faster than good. Boys say it is wrong to fight, steal, kick, break windows and get drunk, while girls are more liable to think it wrong not to comb the hair, to get butter on one's dress, climb trees and unfold the hands. In memory tests a story of 300 words was repeated, after which they were to write down all they could remember of it. A large number remembered the first part, but little of the latter part, showing fatigue; shorter sentences and the fewer unessential words they contain were the better remembered—a practical hint to speakers and writers, who wish to make more permanent impressions. Comparing colored and white children—the colored had the better memory. Girls blush more readily than boys, the fear of being looked at increases it; thus one does not blush so readily in the dark. Children's interest lies in the direction of what the thing is good for and what it can do. The collecting instinct is strongest from 8 to 11 years. What the child collects is a matter of accident. Objects of nature are most commonly collected, such as bird's eggs, shells, etc. Then a desire to find stamps and cigar tags are next in interest, followed by sticks, glass and buttons, sometimes by the commercial spirit in buying and trading. Collecting instinct is not a fad, but a natural desire up to 11 years. If it continues a few years beyond it generally becomes a fad. The first born children are slightly superior mentally than those later born. Those born in winter slightly superior to those born in summer. It is probable that the senses are more acute before than after puberty. Among colored boys it was ascertained that the first born are slightly superior to later born and that there was no relation between different degrees of color of the skin and the mental ability among the boys. Among colored girls the

second born are slightly brighter than the first and later born; the summer born show slight superiority to the winter born, and those with the lightest skin (light brown, yellow) show a lower percentage of mental ability than those of the dark skin—quite contrary to the popular impressions on the subject. (W. F. B.)

The Mental Status of Czolgosz, the Assassin of President McKinley.—It is gratifying that further studies of the mental condition of Czolgosz are forthcoming, as under the summary proceeding and the temper of public opinion at the time, these were necessarily imperfect. WALTER CHANNING (*American Jour. Insanity*, Oct., 1902), a high authority in mental diseases, contrary to the conclusions of the experts who were appointed to examine Czolgosz, and contrary also to the opinion of the younger Spitzka—based on pathological findings, regards Czolgosz as mentally unsound. From a very complete study of data that were not at hand at the time of the crime, he can arrive at no other explanation of the act. He makes the following summary of his conclusions:

1. I feel that from further information than that possessed by those experts who examined Czolgosz, the opinion then expressed by them cannot be accepted as final.

2. Owing to lack of time it was impossible in the examination referred to, to investigate the early history of Czolgosz. Had this been done some of his statements would have been found to be inaccurate.

3. He was not, in my opinion, an anarchist in the true sense of the word, and while anarchist doctrines may have inflamed his mind and been a factor in the crime, it was not the true cause nor an adequate explanation.

4. He had been in ill-health for several years, changing from an industrious and apparently fairly normal young man into a sickly, unhealthy and abnormal one.

5. While in this physical and mental condition of sickliness and abnormality it is probable that he conceived the idea of performing some great act for the benefit of the common and working people.

6. This finally developed into a true delusion that it was his duty to kill the president because he was an enemy of the people; this resulted in the assassination.

7. His conduct after the crime was not inconsistent with insanity.

8. His history for some time before the deed, the way in which it was committed, and his actions afterward, furnish a good illustration of the typical regicide or magnicide as described by Regis.

9. The post mortem examination threw no light on his mental condition, and would not invalidate the opinion that the existing delusion was the result of disturbed brain action.

10. Finally, from a study of all the facts that have come to my attention, insanity appears to me the most reasonable and logical explanation of the crime. (W. F. B.)

DISEASES OF EYE, EAR, NOSE AND THROAT.

C. Zimmermann, M.D., G. E. Seaman, M.D., H. B. Hitz, M.D., N. M. Black, M.D., J. S. Barnes, M.D.

Removal of Metallic Foreign Bodies in the Esophagus by the Aid of X-Rays.—S. E. ALLEN (*Annals of Otology, Rhinology and Laryngology*, Nov., 1902) reports three cases which serve to show the difficulty and danger of attempting removal in the old way and the simplicity and success of the new.

Case 1 was a child two years old, supposed to have swallowed a pebble. X-ray examination showed the presence of what appeared like a four-cornered jack-stone, lying in the neck, just below the larynx. Under chloroform efforts were made at removal, but they only served to wedge the stone in more tightly. The case was referred to a surgeon and the stone removed by esophagotomy. Healing was slow, and when complete an esophageal stricture developed. It was impossible to overcome this and the child died a month or so after.

Case 2. Child, 4 years old, with a history of having swallowed a penny. X-ray examination showed the coin lying across the neck below the larynx. The child was kept in position before the tube and with an assistant looking through the fluoroscope and directing the course of the instrument, the coin was removed with ordinary laryngeal forceps. All was done in a few moments with no laceration and very little struggling of the child.

Case 3. Boy, 5 years old, swallowed a tin whistle. X-ray examination revealed the object in the same position as the cent in case 2. The child was kept in position and the same forceps passed into the esophagus, under direction of the assistant with the fluoroscope, the whistle was grasped and removed. The patient was not in the office ten minutes. These cases have taught Allen that foreign bodies swallowed by children lodge just below the larynx where the esophagus narrows; that although the x-ray examination gives one the impression that a long forceps is necessary, the objects are within easy reach of the ordinary laryngeal forceps. He is so delighted with his success in cases 2 and 3 that he is longing for more of the same kind.

(J. S. B.)

Subcutaneous Paraffin Injections in the Correction of Deformities of the Nose.—A. LOGAN TURNER (*Progressive Medicine*, March, 1903) reviews the subject thoroughly. First calling attention to the various deformities that have been treated by this method—he afterwards pays particular attention to the so-called "saddle-back" nose. Carefully discussing the various kinds of paraffin and methods of injection, he points out the special danger and advantages of this operation. The secret of success or failure depends largely upon the kind of paraffin used and the whole technic of the procedure. The most absolute and careful asepsis is a sine qua non to success. Sterilized paraffin with a melting point of 115° F. seems to give the most general satisfaction. The syringe must be kept at an even temperature to avoid thickening of the paraffin, while withdrawing the needle. The needle is

usually passed downward deep into the parts to be injected, and steadily withdrawn, the injection being made at the same time—care being taken to properly mould the rapidly hardening paraffin. Should reaction set in, iced boric compresses will minimize the tendency to painful swelling. On the whole the operation has been generally favorable in its outcome, although some instances have been reported of extensive sloughing, and at least one death from thrombosis. (H. B. H.)

The Anatomy of Sphenoidal Sinus, etc.—HARRIS PEYTON MOSHER (*Laryngoscope*, March, 1903) contributes an interesting study of the nasal accessory sinuses—with special reference to the sphenoid antrum, and the method of approaching it from the Antrum of Highmore. After carefully detailing the anatomy of the sphenoid bone and its relation to adjacent structures, he very graphically shows the best method for catherizing the ostium sphenoidalis through the nose. The close relationship borne by the sphenoid sinus to the Antrum of Highmore is detailed, and he adds a clear description of his operative procedure—which very briefly is as follows: The antrum is entered through the canine fossa, a knife is passed in through the ostium maxillare and an incision made horizontally backward about three-quarters of an inch; a curette is then passed, and the ethmoidal cells removed by working, towards the septum as high as the os planum. This allows a clear field for inspection of the anterior wall and of the sphenoidal sinus, and a greatly increased space for operative procedure. The accompanying illustrations greatly aid in the understanding of this unique and valuable method.
(H. B. H.)

Tube-like Field of Vision in Hysteria.—R. GREFF (*Berlin. klin. Wochenschr.*, No. 21, 1902) regards the central limitation of the field of vision as very reliable in the diagnosis of hysteria.

The patient sees objects as through a hollow tube. Having found it in no other disease he considers it a positive diagnostic symptom. Acuity of vision and the opthalmoscopic findings are normal. In the case reported a distinct arterial and venous pulsation was observed in the papilla, due, he concluded, to abnormal irritation of the entire vascular system, as no arterial disease was found to exist. (J. S. B.)

Primary Tuberculosis of the Ear followed by Mastoiditis. Report of four cases.—M. A. GOLDSTEIN (*Medical News*, March 14, 1903) after a review of the literature, reports four interesting cases. In each he believes the disease was primary in the middle ear. In three the mastoid was extensively involved and showed a very active and rapid invasion; all developed from direct infection by the bacillus tuberculosis after chronic suppurative otitis media. The mastoid operation was performed in three of the four cases. The wounds healed by firm granulation, a direct contrast to the result in cases in which systemic tuberculous invasion is present. There was a definite demonstration of bacillus tuberculosis in each case. (J. S. B.)

The Treatment of Abscess of the Septum, etc.—C. G. COAKLEY (*Laryngoscope*, March, 1903) advocates the use of Simpson tampon after opening and thorough cleansing, to keep the two layers of the muco-perichondrium in juxtaposition during healing—thus preventing the great deformity which frequently follows this condition. (H. B. H.)

A Contribution to the Pathology and Therapy of Frontal and Ethmoidal Sinusitis and Their Orbital Complications.—PROF. TH. AXENFELD, Freiburg, (*Deutsche med. Wochenschr.*, 1902, No. 40). Inflammations of the orbit chiefly originate in the periorbital nasal sinus. If after evacuation of pus through an incision along the eyebrow, the orbital roof is not found perforated, the frontal sinus must be opened and the radical operation performed in all cases of chronic frontal sinusitis, but, according to A., not unconditionally in acute sinusitis. Here the possibility exists that the original affection of the sinus, although leading to a severe orbital suppuration, has spontaneously healed and does not require any interference.

A. illustrates this by a case of acute suppuration from the right nostril following a severe attack of influenza and producing otitis media perforativa and a subperiosteal orbital abscess below the frontal sinus, as typically found after frontal sinusitis. The orbital abscess healed within two months after operation. As the patient, however, still complained of frontal headaches, a probatory opening of the frontal sinus was made, but the latter was found perfectly normal.

In another case the purulent frontal sinusitis, complicated by a severe orbital abscess, was limited to one side, although there was only a thin septum of mucous membrane between both sinuses. This confirms the view of Kuhnt that propagation into the orbit cannot be attributed to increased pressure in the sinus, else the membranous septum in this case would have been bulged and an affection of the sinus of the other side would have ensued, but that the infection is conveyed along the emissaries of the bones. (C. Z.)

Intermittent Exophthalmus and Varicose Veins in the Region of the Eye.— F. CAUSE (*Inaug. Dissert*, Giessen, 1902). The chief symptom of intermittent exophthalmus, which, so far, has only been observed unilaterally, is an abnormal mobility of the globe in antero-posterior direction which occurs under certain conditions, as in some positions of the body, in deep expiration and compression of the jugular veins, and is a consequence of the varying volume of the retrobulbar contents of the orbit, especially the orbital veins. C. collected the literature from 1897 on, and describes two cases from the university eye clinic of Giessen. Both cases are especially interesting since the affection almost disappeared under pressure bandage and by avoiding any exertions, which might be apt to increase the intravenous pressure of the head. (C. Z.)

Blennorrhoic Conjunctivitis.—J. H. SPIEGELHOFF (*Inaug. Diss., Giessen*, 1902) reports on 80 cases of blennorrhoea, among 39,181 eye patients, treated at the eye clinic at Giessen from April 1, 1890, to January 1, 1902, i. e., 0.204

per cent., ophthalmia neonatorum 0.15 per cent. 23.44 per cent. were permanently damaged; excluding those that came with ulcerated or destroyed cornea to the clinic, only 5.4 per cent. The treatment consists in iced applications, frequent washing with oxycyanate of mercury or hypermanganate of potash and cauterization with 2 per cent. nitrate of silver or mitigated lapis. If an ulcer exists, the caustics are abandoned. Many cases healed under ice and irrigations with oxycyanate of mercury without nitrate of silver. The results with protargol were not favorable, but this may be due to the minor strength (2—5 per cent.) of the solutions. A case of argyrosis was observed in a case of chronic trachoma which had been treated elsewhere with protargol.

(C. Z.)

Ocular Complications of Variola.— BURTON K. CHANCE (*American Medicine*, April 8, 1903), presents a study of the ocular complications of variola observed in 2,000 cases at the Municipal Hospital, Philadelphia. The author says that ocular affections in this disease are quite usual: they appear in the acute stage, the stage of convalescence, and frequently as a sequel. In the 2,000 cases observed there were 36 instances of corneal ulcers, 17 of which perforated with loss of one eye-ball, and 15 healed without performation; 15 of the above cases were in unvaccinated individuals. Pustules of lid borders were common. Conjunctivitis was frequently met with, and there were 10 cases of iritis observed. Pustules of the conjunctivæ were rarely met with. In the experience of the author the cornea "is not subject to the specific lesion of variola." Ulceration of the cornea does occur, but is independent of the general process.

(G. E. S.)

Atropin Poisoning.—S. EDITH IVES (*American Medicine*, April 4th, 1903) reports a case of atropin poisoning in the person of a child aged 5 years, from the instillation of 6 drops of a solution of the strength of 1 grain to 2 drachms, covering a period of two days. The symptoms were great restlessness and delirium which lasted 12 hours, and which was followed by sleep. Notwithstanding the fact that 6 drops were instilled into each eye, the pupils were not fully dilated.

The author thought there might have been a mistake made in compounding the prescription, but a chemist who analyzed it said the drug used was atropin.

(G. E. S.)

Eye Affections complicating and resulting from Rheumatism.—RALPH OPDYKE (*Medical News*, April 11, 1903), argues against the statements of Hutchinson, Fuller, Garrod and others that rheumatism is a very infrequent cause of affections of the eye. He goes into considerable detail respecting the various forms of so-called rheumatic diseases of the eye, and tries to show that there may result from an attack of rheumatism an inflammation of almost any of the tissues of the eye. These structures show a peculiar susceptibility toward the rheumatic poison, and when involved quickly respond to rheumatic remedies.

(G. E. S.)

ROENTGEN-RAY THERAPY.

A. W. Myers, M.D.

Cancer of the Larynx Cured by the X-Rays.—SCHEPPEGRELL (*New York Med. Journal*, Dec. 6, 1902) reports a well marked case of cancer of the larynx of eight months' duration in a man of 57, treated ten minutes daily for twenty days at distances varying from fifteen to seven inches, without any particular change except relief from pain. After cessation of treatment matters at first became worse, the pain returning with fever and increased bloody expectoration. But within a few days improvement began and was rapid and continuous. After a rest of two weeks, treatment was resumed and ten more exposures given, when the patient was discharged cured, the mass having entirely disappeared and the ulcers completely healed. There was no return after two months.

Roentgen Ray and Ultraviolet Light in the Treatment of Malignant Diseases of the Uterus, with Report of an Inoperable Case.—MARGARET A. CLEAVES (*Medical Record*, Dec. 13, 1902) reports a case of inoperable carcinoma of the cervix uteri with infiltration of the anterior and posterior vaginal walls and also of the broad ligaments, of eighteen months' duration, in a woman of 42 years, treated by X-ray and violet-light applications with relief of the symptoms and apparently entire disappearance of the growth. More than one hundred treatments were given extending over a period of nearly six months.

A Contribution to the Subject of Radiotherapy and Phototherapy in Carcinoma, Tuberculosis, and other Diseases of the Skin.—HYDE, MONTGOMERY, and ORMSBY (*Journal of the Amer. Med. Assoc.*, Jan. 3, 1903) present the results of their observations and experience in a large number of cases, their conclusions being that in skin tuberculosis these methods of treatment are superior to any others now known. In superficial carcinoma involving considerable areas radio-therapy is undoubtedly preferable to all other known methods of treatment. For many of the circumscribed growths removal by the knife or curette and then a series of x-ray exposures is often advised. In operable carcinoma of the skin which includes deeper structures, the same course is recommended. Where the growths are inoperable radio-therapy offers a possible chance of recovery, or of lessening the pain and discomfort of the patient. There is, however, the danger that in exciting an inflammation in carcinoma one is to some extent encouraging an extension of the growth through a dissemination of the cancer-cells to normal or inflamed tissues surrounding the growth and of thus favoring metastases. The value of radio-therapy is fairly well established in hypertrichosis, psoriasis, and many chronic inflammatory diseases of the skin, especially in acne rosacea, folliculitis, and suppurating wounds.

The comparative values of radio-therapy and photo-therapy are still in doubt; in skin tuberculosis the latter probably gives better results with less danger of burn.

The authors emphasize the dangers of the use of x-rays by the unskilled or unscrupulous and urge the necessity for careful study and expert guidance in its application.

X-Light in Therapeutics.—SKINNER (*Yale Med. Journal*, Jan., 1903) states that four hypotheses have been advanced in explanation of the influence which x-light exercises over malignant neoplasms. First, that the curative process is brought about through stimulation of the reparative functions, dependent upon the induction of an inflammatory reaction, a cauterant action. Second, that there is a direct destructive influence, exercised selectively upon tissues of aberrant development and low vitality. Third, that cancer is a disease of parasitic origin and that x-light inhibits or destroys the parasite. Fourth, that malignant degeneration is simply a departure from normal protoplasmic activity and that the x-light possesses the power so to influence molecular motion as to overcome the aberrant tendency of cell development and restore the normal characteristics of the formative function. The author inclines to the last theory.

He reports briefly a series of thirty-three cases of deeply seated cancer from which he reaches the following conclusions: First, the pain of deeply seated cancer is removable by x-light wholly or in part. Second, in many cases x-light is capable of markedly retarding the progress of the disease, thus prolonging life even in cases where it cannot be ultimately preserved. Third, in a proportion of cases still uncertain, x-light possesses the power entirely to overcome deeply seated malignant processes, restoring the patient to apparently perfect health. Fourth, a small number of deeply seated malignant growths show absolutely no result from treatment. Fifth, toxic symptoms, even of great severity, not infrequently accompany the treatment of malignant growths by the x-light, probably arising from the formation of a toxin in the breaking down masses of tissues which have become too deeply involved to permit regeneration.

In regard to the use of the knife in operable cases he maintains that total extirpation alone, even under the most favorable circumstances, is not sufficient, but should always be supplemented by a course of x-ray treatment.

Limitations of the X-Ray in the Treatment of Malignant Tumors.—COLEY (*Medical News*, Jan. 31, 1903) reports the results of his treatment of 75 cases of malignant tumors.

Out of 27 cases of sarcoma treated there were five cases of inoperable round-celled sarcoma in which the tumors entirely disappeared under prolonged x-ray treatment, varying from four to ten months, but in all of these cases recurrences took place requiring further treatments and none can be called cured. Nine cases of sarcoma showed great improvement but the other thirteen were not improved.

Twenty-one cases of cancer of the breast were treated, in some, small recurrent nodules entirely disappeared after a few weeks of treatment, yet in every instance a recurrence followed after treatment was discontinued. Of the larger growths none was cured although in most instances there was temporary improvement.

In ten cases of deep seated intra-abdominal cancer in one only, a carcinoma of the cervix, has the disease apparently entirely disappeared.

The superficial epitheliomas showed the best results, while the tongue cases, three in number, showed little or no improvement.

One case of Hodgkin's disease showed remarkable improvement.

While admitting the value of the x-ray as an addition to the means of fighting disease, Coley thinks its use should be limited to inoperable cases and to cases after operation, as a prophylactic measure.

The Roentgen Treatment of Malignant Disease.– LEONARD (*Philadelphia Med. Journal*, Feb. 14, 1903) considers that no other method is as potent in relieving inoperable cancer or in treating recurrent growths. It has been demonstrated that this agent has an alterative and destructive action upon malignant tissue, producing retrograde changes that vary in their degree and intensity. These degenerative and destructive effects may be so great that, in large subcutaneous malignant growths of low vitality, such a rapid destruction may take place as to flood the system with toxins and result in a fatal auto-intoxication or septicemia. The harmful effects noted by some observers as "a stimulation of the growth of the tumor" were probably due to this cause or to a real stimulation by too weak a dosage.

As a primary method of treatment it has a place only when operation is contra-indicated or when better cosmetic results can be produced, in cases in which life is not threatened by delay, or in which the disease is already inoperable.

VITAL STATISTICS.

(From Monthly Report of the Health Department of the City of Milwaukee.)

SUMMARY OF STATISTICS OF DEATHS, BIRTHS, CONTAGIOUS DISEASES, ETC., FOR MARCH, 1903.

Number of Deaths	450
Number of Births reported	649
Number of Marriages reported	153
Number of Still Births	29
Number bodies brought to city for burial	32
Total number burial permits issued	511
Number of deaths investigated by department	32
Number of deaths reported by coroner	27
Cases of Small Pox reported	13
Cases of Tuberculosis reported	3
Cases of Diphtheria reported	27
Cases of Scarlet Fever reported	25
Cases of Typhoid Fever reported	15
Cases of Measles reported	8
Cases admitted to City Isolation Hospitals	20
Permits for Cremation	4

COMPARATIVE MORTALITY

For Month of March, 1903, and Deaths from 7 Principal Zymotic Diseases, as taken from Official Reports.

City.	Population.	Deaths.	Annual Death Rate.	Small Pox.	Diphtheria.	Scarlet Fever.	Measles.	Typhoid Fever.	Diarrhoeal Diseases.	Tubercular Diseases.
*New York	3,732,903	5,630	19.61	—	184	66	41	41	110	789
*Chicago	1,885,000	2,401	16.56	6	43	27	17	46	82	245
*Philadelphia	1,349,712	2,271	21.87	12	51	17	8	127	80	259
Cleveland	420,000	764	16.91	3	6	1	—	55	40	61
Buffalo	380,000	504	15.65	1	7	1	2	11	19	45
Milwaukee	315,000	450	16.86	—	3	—	—	2	17	51
New Orleans	310,000	560	21.29	—	5	—	—	6	17	87

W. C. BENNETT, M. D.,
Registrar of Vital Statistics.

* For four weeks, ending March 7th to March 28th, inclusive.

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(a) That as a prerequisite to reciprocal registration, the applicant therefor shall file in the office of the Board of the State of which he is a licentiate such evidence as will enable the said Board to certify that he is of good moral and professional character.

Such certificate shall be filed with his application for reciprocal registration in another State.

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QUALIFICATION NO. II.

(c) That a certificate of registration, or license issued by the proper Board of any State, may be accepted as evidence of qualification for reciprocal registration in any other State. Provided, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the State in which reciprocal registration is sought, and that the date thereof was prior to the legal requirement of the examination test in such State.

J. Nat. Jan. to May 1903.

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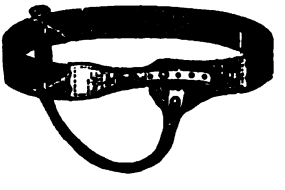

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